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IONOSPHERIC DATA IN JAPAN

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INTRODUCTION

This Series contains data on ionosphere (I), solar radio emission (S) and radio propagation (P) obtained at the following stations under the Communications Research Laboratory, Ministry of Posts and Telecommunications of Japan.

Station	Geographic		Geomagnetic		Technical Method
	Latitude	Longitude	Latitude	Longitude	
Wakkanai	45°23.5′N	141°41.2′E	35.3°N	206.5°	Vertical Sounding (I)
Kokubunji	35°42.4′N	139°29.3′E	25.5°N	205.8°	Vertical Sounding (I)
Yamagawa	31°12.1′N	130°37.1′E	20.4°N	198.3°	Vertical Sounding (I)
Okinawa	26°16.9′N	127°48.4′E	15.3°N	196.0°	Vertical Sounding (I)
Hiraiso	36°22.0′N	140°37.5′E	26.3°N	206.8°	Solar Radio Emission (S)
Inubo	35°42.2′N	140°51.5′E	25.6°N	207.0°	Radio Receiving (P)

A. IONOSPHERE

Ionospheic observations are carried out at the above four stations in Japan by means of vertical sounding using ionosondes.The ionosonde produces ionograms,which are recorded digitally on computer storage medium as well as graphically on 35 mm photographic film. The digitally-recorded ionograms are collected from each station by the central computer and reduced to numerical values and Summary Plots by the automatic processing system. The ionograms obtained at Kokubunji are manually scaled as well by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

Digital ionograms are automatically scaled by the pattern recognition method. The following five factors of ionospheric characteristics are published for the present. The reliability of these factors has been ascertained by comparison of the automatically-scaled parameters with the manually-scaled values of large amounts of test ionograms.

The published data consist of tabulations of hourly values of three factors (*foF2, fEs, fmin*) and monthly medians of two factors (*h′Es, h′F*) , daily Summary Plots and monthly medians plot of *foF2*.

a. Characteristics of Ionosphere

foF2	Ordinary wave critical frequency for the *F2* layer
fEs	Highest frequency of the *Es* layer whether it may be ordinary or extraordinary
fmin	Lowest frequency which shows vertical ionospheric reflections
h′Es *h′F*	Minimum virtual height on the ordinary wave for the *Es* and *F* layers, respectively

b. Descriptive Letters

The following descriptive letters are used in the tables.

A Impossible measurement because of the presence of a lower thin layer,for example *Es* (for *foF2*).

B Impossible measurement because of absorption in the vicinity of *fmin*.

C Impossible measurement because of any failure in observation.

G Impossible automatic scaling because of too small ionization density of the layer (for *fEs*).

N Impossible automatic scaling because of complex echoes.

Blank No digital record because of trouble in the automatic data processing system, but existence of film record.

c. Definitions of the CNT,MED,UQ and LQ

Median count (CNT) is the number of numerical values from which the median has been computed. In addition to numerical values, the count may include a descriptive letter G.

Median (MED) is defined as the middle value when the numerical values are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

Upper quartile (UQ) is the median value of the upper half of the values when they are ranked according to magnitude; the *lower quartile* (LQ) is the median value of the lower half.

If CNT is less than 10, there are blank spaces left.

d. Reliability of Automatic Scaling

The results of the comparison between automatically-scaled values and manually-scaled ones showed that hourly values of *foF2* , *fEs* and *fmin* were scaled within a difference of 1 MHz from about 90 , 90 and 99% , respectively of the test ionograms.

e. Summary Plot

Daily Summary Plots which are made from quarter-hourly digital ionograms are published to present general ionosphere conditions. The upper and middle parts of a Summary Plot show the diurnal variation of the frequency range of the echoes reflected from the *F* and *E* regions, respectively. The two solid arcing lines indicate the predicted values of *fxE* and *foE* calculated by the method described in the CCIR report 340. The lower part shows the diurnal variation of the virtual height where the echo traces become horizontal.

A2. Manual Scaling

The published data consist of tabulations of hourly values of the ionospheric characteristics and figures of daily *f*-plot.

All symbols and terminology in the tables or figures of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction (Second Edition) 1972 " and its revision of chapters I-4, published in July 1978.

a. Characteristics of Ionosphere

fxI	Top frequency of spread *F* trace
foF2 *foF1* *foE* *foEs*	Ordinary wave critical frequency for the *F2,F1, E* and *Es* including particle *E* layers, respectively
fbEs	Blanketing frequency of the *Es* layer, e.g. the lowest ordinary wave frequency visible through *Es*
fmin	Lowest frequency which shows vertical ionospheric reflections
M(3000)F2 *M(3000)F1*	Maximum usable frequency factor for a path of 3000 km for transmisson by *F2* and *F1* layers, respectively
h′F2 *h′F* *h′E* *h′Es*	Minimum virtual height on the ordinary wave for the *F2*, whole *F, E* and *Es* layers,respectively
Types of *Es*	See below b.(iii)

b. Symbols

(i) Descriptive Letters

The following letters are entered after, or used to replaced a numerical value on the monthly tabulation sheets, if necessary.

A Measurement influenced by, or impossible because of, the presence of a lower thin layer,for example *Es*.

B Measurement influenced by, or impossible because of, absorption in the vicinity of *fmin*.

C Measurement influenced by, or impossible because of, any non-ionospheric reason.

D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.

F Measurement influenced by, or impossible because of, the presence of spread echoes.

G Measurement influenced or impossible because the ionization density of the layer is too small to enable it to be made accurately.

H Measurement influenced by, or impossible because of, the presence of a stratification.

K Presence of particle *E* layer.

L Measurement influenced or impossible because the trace has no sufficiently definite cusp between layers.

M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

P Man-made perturbations of the observed parameter; or spur type spread *F* present.

Q Range spread present.

R Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.

S Measurement influenced by, or impossible because of, interference or atmospherics.

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

V Forked trace which may influence the measurement.

W Measurement influenced or impossible because the echo lies outside the height range recorded.

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabulation sheets, if necessary.

A Less than. Used only when *fbEs* is deduced from *foEs* because total blanketing of higher layer is present.

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

O Extraordinary component characteristic deduced from the ordinary component. (Used for x-characteristics only.)

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

When more than one type of *Es* trace are present on the ionogram, the type for the trace used to determine *foEs* must be written first. The number of multiple trace is indicated after the type letter.

The types are:

f An *Es* trace which shows no appreciable increase of height with frequency.

l A flat *Es* trace at or below the normal *E* layer minimum virtual height or below the particle *E* layer minimum virtual height.

c An *Es* trace showing a relatively symmetrical cusp at or below *foE*. (Usually a daytime type.)

h An *Es* trace showing a discontinuity in height with the normal *E* layer trace at or above *foE*. The cusp is not symmetrical, the low frequency end of the *Es* trace lying clearly above the high frequency end of the normnal *E* trace. (Usually a daytime type.)

q An *Es* trace which is diffuse and non-blanketing over a wide frequency range.

r An *Es* trace showing an increase in virtual height at the high frequency end similar to group retardation.

a An *Es* trace having a well-defined flat or gradually rising lower edge with stratified and diffuse traces present above it.

s A diffuse *Es* trace which rises steadily with frequency and usually emerges from another type *Es* trace.

d A weak diffuse trace at heights below 95 km associated with high absorption and large *fmin*.

n The designation 'n' is used to denote an *Es* trace which cannot be classified into one of the standard types.

k The designation 'k' is used to show the presence of particle *E*. When *foEs* > *foE* (particle *E*) the *Es* type precedes k.

c. Definitions of the CNT, MED, UQ and LQ

Median count (CND) is the number of values from which the median has been computed. In addition to numerical values, the count may include certain descriptive letters.

Median (MED) is the middle value when the numerical values are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

Upper quartile (UQ) is the median value of the upper half of the values when they are ranked according to magnitude; *the lower quartile* (LQ) is the median value of the lower half.

B. SOLAR RADIO EMISSION

Solar radio observations at 200, 500 and 2800 MHz are carried out at Hiraiso. The observation equipment consists of three parabolic antennas, one with 10-meter diameter for 200 MHz measurements, one with 6-meter diameter for 500 MHz measurements and one with 2-meter diameter for 2800 MHz measurements, each being equipped with a pair of crossed doublet antennas as a primary radiator, and three appropriate receivers. Each pair of the crossed doublet antennas is used as a polarimeter. Observations are continuously carried out almost from sunrise to sunset.

B1. Daily Data at Hiraiso

The three-hourly mean and daily mean values of the solar radio emission intensities are tabulated for 500 MHz measurements. The intensities are expressed by the flux density in 10^{-22} Wm^{-2} Hz^{-1} unit.

The following symbols are used in the tables, when interference or radio bursts prevented measuring the base-level flux densities or determining the variability indices:

* Measurement impossible because of interference.

B Measurement impossible because of bursts.

Daily data within parentheses mean that the observation time does not exceed one third of the period.

B2. Outstanding Occurrences at Hiraiso

The table is a list of outstanding occurrences of solar radio emission bursts observed at 200, 500 and 2800 MHz during a month.

Listed in the table are the date, frequencies, the type of event, the start time and the time of maximum, both in U.T. expressed in hours, minutes and tenths of a minute, the duration in minutes, the peak and mean flux densities in 10^{-22} $Wm^{-2}Hz^{-1}$ unit, and the polarization.

The type of event is expressed by a combination of a numerical code and a letter symbol in accordance with the " Descriptive Text of Solar Geophysical Data, NOAA " as defined by H. Tanaka in the " Instruction Manual for Monthly Report of Solar Radio Emission, WDC-C2 " in January 1975:

SGD Code	Letter Symbol	Morphological Classification
1	S	Simple 1
2	S/F	Simple 1F
3	S	Simple 2
4	S/F	Simple 2F
5	S	Simple
6	S	Minor
7	C	Minor+
8	S	Spike
20	GRF	Simple 3
21	GRF	Simple 3A
22	GRF	Simple 3F
23	GRF	Simple 3AF
24	R	Rise
25	R	Rise A
26	FAL	Fall
27	RF	Rise and Fall
28	PRE	Precursor
29	PBI	Post Burst Increase
30	PBI	Post Burst Increase A
31	ABS	Post Burst Decrease
32	ABS	Absorption
40	F	Fluctuations
41	F	Group of Bursts
42	SER	Series of Bursts
43	NS	Onset of Noise Storm
44	NS	Noise Storm in progress
45	C	Complex
46	C	Complex F
47	GB	Great Burst
48	C	Major
49	GB	Major+

The polarization is expressed by the polarization degree and sense as follows:

R or L	right- or left-handed polarization,
W,M or S	weak,moderate or strong polarization,
0	almost zero or unable to detect polarization due to small increase of flux,
00	polarization degree of less than 1 percent.

One of the following symbols may be attached after numerical values, if necessary.

D	greater than, or later than,
E	less than or earlier than,
U	approximate, or uncertain.

B3. Summary Plots of $F_{10.7}$ at Hiraiso

The 10.7 cm solar radio flux at Hiraiso is plotted over a one month period. The 10.7 cm flux ($F_{10.7}$) is determined by adjusting the 10.7 cm radio flux measured at Hiraiso to the Pentincton 10.7 cm radio flux. The figure on the right-hand side shows the $F_{10.7}$ index estimated at Hiraiso.

The following symbols are used in the $F_{10.7}$ index:

*	Measurement made not at 3h U.T..
B	Measurement affected by bursts.

C. RADIO PROPAGATION

C1. Phase Variation in OMEGA Radio Waves at Inubo

The phase values of eight OMEGA radio signals as received at Inubo are depicted for an interval of one month, along with the phase deviation defined as a deviation from a value averaged over the six quietest day within the month. Particulars of the received signals are given in the table below.

In each of the four panels of the figure, the phase (ϕ) is shown in the lower part and the phase deviation ($\Delta\phi$) is shown in the upper part. The phase data are sampled every 30 min, so the curves of the phase and phase deviation are composed of 48 data points per day. The phase delay is measured as a positive value.

The polar cap phase anomaly (PCPA) caused by the solar protons are well detected on the Norway signal. The start, end and maximum times of the PCPA are listed in the table next to the figure, where the times are expressed as day / hour & minute in U.T.. The maximum phase deviation in the list is defined as a phase advance (negative values in the figure) in degrees.

C2. Sudden Phase Anomaly (SPA) at Inubo

Data of sudden phase anomaly (SPA) are prepared from the records of phase measurement of VLF radio waves received at Inubo. The transmitting stations are listed in the following table.

Phase advance is shown in unit of degree at its maximum stage. No transmission or no reception during the period is indicated by -, an indistinguishable record is spaced out, and a multi-peak event is marked by *. The most remarkable or distinct phase advance is underlined and listed in the column of *Time*.

In table (b) SPA, *date* indicates the day to which the *start-time* of the event belongs.

The following letters may be attached to the value, if necessary.

D	greater than,
E	less than,
U	uncertain or doubtful.

Transmitting Stations

Name	Location (Geographic Coordinates)		Call Sign	Frequency (kHz)	Radiation Power (kW)	Arc Distance from Inubo (km)
Norway	66°25′N	013°08′E	/N	13.6	10	7820
Liberia	06°18′N	010°40′W	/L	13.6	10	14480
Hawaii	21°24′N	157°50′W	/H	13.6	10	6100
North Dakota	46°22′N	098°20′W	/ND	13.6	10	9140
La Reunion	20°58′S	055°17′E	/LR	13.6	10	10970
Argentina	43°03′S	065°11′W	/AR	13.6	10	17640
Australia	38°29′S	146°56′E	/AU	13.6	10	8270
Japan	34°37′N	129°27′E	/J	13.6	10	1040
North West Cape	21°49′S	114°10′E	NWC	22.3	1000	6990

HOURLY VALUES

IONOSPHERIC DATA of Wakkanai is not available due to the ionosonde trouble.

HOURLY VALUES OF foF2 AT Kokubunji

SEP. 2000

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	74	68	63	60	57	57	94	92	113	104	104	110	104	102	102	100	96	93		94	81	67	64	68
2	67	67	68	56	56	53	82	114	94	101	116	107	114	112	108	103	97	93	96	93	81	94	93	74
3	57	68	68	60	58	67	93	116	122	102	108	115	110	96	87	81	91	94	91	81	81	94	67	68
4	57	A	58	55	53	69	94	116	100	97	100	100	98	98	100	98	97	86	93	94	92	68	A	67
5	A	68	68	67	53	50	94	94	98	86	96	112	114	94	92	98	100	98	106	84	80	A	68	77
6	92	95	75		68	67	94	94	98	102	110	110	111	106	102	97	93	96	114	85	82	82		95
7	92	68	72	68	60	68	94	114	117	104	108	120	109	106	106	105	102	112	104	81	68	67		73
8		73	60		60	69	93	104	102	109	112	94	101	82	83	82	83	96	104	A	68	74	69	67
9	68		60	62	50	44	67	82	84	92	103	100	86	83	83	83	91	100	110	67	57	58	58	58
10	57	57	60	59	51	51		94	95		94	104	97	91	96	97	103	113	111	94	67	67	68	66
11	62	68	67	60	57	68		94	97	96	96	94	107	96	98	112	112	113	100	82	70	67	68	77
12	74	71	60	61	56	55	92	107	101	90	99	104	106	97	103	103	106	108	114	92		80	94	94
13	94	68			60	58	83	113	114	106	114	105	108	118	113	106	98	92	104	60	A	A	61	61
14	57	60	60	68	35	A	73	86	93	98	103	106	110	106	100	103	96	114		95	A	60	68	67
15	68	67	58	54	52		92	102	104	103	114	118	120	112	103	102	96	93		92	94	69	64	68
16	58	69	62	59	57	A	66	94	92	105	113	107	97	111	118	108	115	93	94	82	92	69	60	60
17	62	68	62	60	57	48	70	104	113				98	97	86	103	102	98	86	94	68	70	67	68
18	53	57	60		48		70	113	89	113	115	81	100	125	102	106	91	104	102	82	76	75	68	68
19	66	60	69	69	53		66	94	116	104	103	96	107	111	115	114	110	116	112		72	67	68	68
20	61	65	68	66	A		58	82	82	81	78	82	85	93	84	92	101	95	85	94	57	58	60	60
21	60	58	60	58	56	57		93	82	88	90	98	113	108	112	107	114	114		95	58	68	60	69
22	60	60	60	60	57			92		101	114	112	111	111	118	103	98	102	106			60	68	69
23	68	67	68	59	56	57		96	115	103	106	105	106	106	103	107	114	114	95	95	60	63	68	65
24	60	68	67	56	57	55	93	108	116	96	91	96	105	112	112	103	116	94	90	82	70	70	68	70
25	68	61	61	54	57	67	94	117	116	92	98	102	112	120	115	110	116	116	119	95	80	71	68	A
26	67	63	51	60	50	60	75	93	86		93	98	103	108	102	96	91	93	93	67		68	58	67
27	60	52	59	60	60		94	92	116	110	106	110	106	98	101	97	93	93	88	69	81	70	68	68
28	60	56	68	58	57	54	94	94	104	114	127	131	131	133	127	117	113	122	86	68	69	76	69	67
29	62	68	61	57	60	69	94	103	120	120	127	126	111	115	117	114	116	104	97	82	76	72	69	68
30	68	60	57	60	67	67	86	117	111	111	115	117	116	122	118	117	116	113	101	95	72	68	56	59
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	29	26	29	22	25	30	29	27	29	29	30	30	30	30	30	30	26	27	25	28	27	29
MED	62	67	61	60	57	58	92	95	102	102	106	105	107	106	102	103	100	99	100	85	72	68	68	68
U Q	68	68	68	61	59	67	94	113	115	106	114	112	111	112	113	107	113	113	106	94	81	73	68	69
L Q	60	60	60	58	53	54	71	93	93	96	97	98	101	97	98	97	96	93	93	81	68	67	61	66

HOURLY VALUES OF fEs AT Kokubunji

SEP. 2000

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	33	43	25	35	39	25	41	G	G	G	G		32	26	57	41	34	28	32	G
2	G	G	G	G	G	G	30	33	31	46	G	36	G	G		34	35	41	33	30	24	51	28	G
3	G	G	G	G	G	G	32	27	48	53		60	61	47	36	40	61	50	43	74	35	30	35	30
4	40	54	30	30	29	39	31	40	49	47	G	G		40	46	33	29	30	28	G	36	G	68	33
5	34	48	31	27	G	G	24	30	39	52	58	59	59	G	G	46	39	39	26	28	36	159	36	32
6	29	G	G	G	G	G	33	33	66	40	50	G	52	44	40	33	50	55	38	G	30	30		30
7	G	G	G	G	40	31	22	28	29	34	G	G	G	G	G	33	32	26	G	G	G	G	26	26
8	27	27	26	26	G	31	63	28	42	46	G	G	G	37	30	42	48	46	58	98	60	28	G	26
9	G	30	27	G	G	G	29	37	33	31	27	G	G	G	G		31	44	40	38	29	30	G	G
10	G	G	G	G	G	G	G	38	37	40	38	G	G		39	38	28	34	36	G	G	G	G	G
11	G	G	G	G	G	G	32	32	34	35	G	G			37	34	54	37	28	38	G	32	G	G
12	G	G	G	G	G	G	33	37	34	32	30	29	G	G	35	31	34	34	28	G		G	G	G
13	G	G	G	G	G	G	23	57	53	38	G	G	G	G	31	49	49	48	46	54	38	69	42	42
14	33	25	26	G	G	34	46	52	58	42	39	G	G	40	28	32	36	84			105	41	28	G
15	24	G	G	G	G	30	30	41	74	44	52	57	G	32	35	G	32	29	31	24	G	39	46	28
16	G	24	G	33	G	33	24	30	G	42	38	39	35	G	G	26	31	39	37	29	32	28	G	G
17	G	25	G	G	G	G	G	38	40		G	G	G	G	G		32	30	30	G	G	G	G	G
18	G	G	G	G	G	G		28	30	33	G	G	G	G	G	31	47	36	26	G	G	G	22	G
19	G	G	G	G	G	G	G		34	G	G	G	G		36	32	31	22	27	G	G	58	28	G
20	32	G	G	G	30	G	33	34	34	38	G	G	G	G	61	60	21	23	57	46	43	47	G	G
21	G	G	G	G	G	G	G		46		G	G	G	G	28	33	30	26		39	G	G	G	G
22	G	28	G	G	G	G	32	31	32	33	34	34	33	G		30	29	20	G	G		G	G	G
23	G	G	G	G	G	30	G	33	33	G	G	G	G	G	G		28	35	31	28	G	G	G	G
24	G	G	G	G	G	G	32	35	33	50	G	G	G	G	34	32	49	40	41	38	49	G	G	G
25	G	G	G	G	G	G			32	33	G	45	G	G	G	50	44	37	57	55	40	G	G	63
26	38	24	G	G	G	G	33	41	53		57	33		G		32	47	53	39	26	42	G	G	G
27	G	G	G	G	G		G	29	31	58	44	G	30	31	G	29	29	25	G	26	G	28	29	25
28	23	G	G	G	G	G	G	32	33	30	G	G	G	35	34	34	28	33	G	G	G	G	G	G
29	G	G	G	G	G	33	29	33	34	G	G	G	G	G	G		28	32	G	G	29	G	G	G
30	G	G	G	G	G	G		G	29	31	G	G	G	G	G	32	28	31	33	G	G	32	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	29	27	27	30	27	29	30	27	27	27	25	30	30	28	29	28	30	29	30
MED	G	G	G	G	G	G	29	33	34	38	G	G	G	G	28	33	32	34	32	26	29	28	G	G
U Q	24	24	G	G	G	30	32	38	46	46	38	33	G	32	36	39	47	41	40	38	37	32	28	26
L Q	G	G	G	G	G	G	G	30	32	31	G	G	G	G	G	31	29	29	26	G	G	G	G	G

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT Kokubunji

SEP. 2000

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	14	14	14	14	14	15	16	16		47	50		60		17	16	14	16	14	15	15	15	15
2	16	15	15	14	14	15	14	14	16	17		28		62	23	16	17	14	15	15	14	15	14	15
3	14	14	15	16	16	15	15	15	16	17	18		21	20	20	14	15	15	15	15	14	14	15	15
4	15	14	14	16	14	14	15	17	20	20		50	30		29	23	16	15	14	15	14	14	15	14
5	14	15	14	15	15	15	14	16	17	21		40	39	N	45	22	16	15	17	14	14	14	15	15
6	14	15	14	14	14	15	15	20	21	22	35	55	29	35	22	18	15	15	15	15	15	14		14
7	14	14	14	14	15	15	26	17	20	26		57	50	60	50	21	17	15	16	15	15	15	15	14
8	15	14	16	16	14	14	15	17	21	24				29	21	18	18	15	15	15	15	14	20	17
9	15	15	14	15	14	15	15	14	16	23		50			20		16	15	15	15	16	15	18	33
10	14	15	14	15	20	14	15	15	18		22			20	14	16	18	15	16	14	15	15	15	15
11	15	14	14	14	14	14	15	15	17	17		47	27	26	20	18	15	14	14	14	14	15	14	14
12	15	14	14	14	14	15	15	15	16	20		18			20	17	15	15	17	15		14	15	15
13	15	15	15	15	15	14	15	15	18	26		48			21	20	15	15	15	15	15	14	14	15
14	15	14	14	15	15	14	14	16	17	27	30			30	18		14	14		14	14	15	15	14
15	15	15	14	15	14	14	14	16	18	18	28	26		17	16	42	14	15	14	15	14	15	14	15
16	16	14	17	14	14	15	24	16	18	27	14	20	15	53	63	17	14	14	14	14	14	16	15	15
17	15	14	14	15	14	14	15	16	16	20	47	46	46	49	55	23	16	15	15	14	14	14	14	16
18	15	14	15	15	14	15	14	16	17	18		52			45	21	17	15	15	14	15	14	14	14
19	15	14	15	14	15	15	23	14	16	40	16	52	49	21	23	18	16	14	16	15	14	14	14	14
20	14	15	15	15	15	14	15	14	23	18			52	49	23	16	18	16	14	14	14	14	15	18
21	15	15	14	15	14	15	23	17	26		46	54	49	48	44	21	18	14		15	14	14	15	17
22	15	15	18	15	16	15	15	15	17	21	22	23	22		15	22	17	20	14	14		14	15	14
23	15	15	14	15	14	18	21	16	17	48	48	48	56	46	47	18	17	16	14	22	15	14	15	15
24	14	15	14	15	15	14	14	16	22	18		48	48		20	21	15	14	15	14	14	14	15	15
25	14	15	14	15	15	15	16	14	17	18		18	18		42	18	15	15	14	14	14	15	15	14
26	14	15	15	15	14	15	16	16	16		37	48	15	49	15	15	15	15	15	14	14	15	14	15
27	15	15	15	15	15		15	18	15	20	42	49	16	23		17	15	15	14	14	14	14	14	14
28	15	14	15	14	14	14	21	22	18		47	46	46	26	23	21	16	15	15	15	15	14	15	15
29	15	15	15	15	15	15	15	14	20		43	46	44	45	40	15	15	15	15	15	15	14	14	14
30	14	15	14	15	14	15	22	18	17	23		46	46	44	42	23	15	15	15	14	14	14	15	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	29	30	30	30	24	16	25	20	21	28	28	30	30	28	30	28	30	29	30
MED	15	15	14	15	14	15	15	16	17	20	36	48	42	44	23	18	16	15	15	14	14	14	15	15
U Q	15	15	15	15	15	15	16	17	20	25	46	50	48	49	43	21	17	15	15	15	15	15	15	15
L Q	14	14	14	14	14	14	15	15	16	18	22	34	21	24	20	17	15	14	14	14	14	14	14	14

HOURLY VALUES

IONOSPHERIC DATA of Yamagawa is not available due to the ionosonde trouble.

HOURLY VALUES OF foF2 AT Okinawa

SEP. 2000

LAT. 26°16.9'N LON. 127°48.4'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	109		117	81	70		72	84	94	102	114	117	149	154	156	157	152	146	142		117		94	81
2	79		92	71	58	58	57	87	117	97	91	97	122	150		158	152	145	A	A	91	88	93	82
3	71	74		72	55	60	70	82	124	118	116	131	121	121	121	125	122	120	129	129	119	114	110	N
4	86	93	92	82	65	55	71	97	94	122	104	118	132	160	172	156	136		173	186	158	95	122	113
5	116		94	95	60	46	50	90	99	96	97	117	122	121	121	120	118	131	127	131	94	95	101	91
6	92	94		92	78	68			96	94	114	121	121	122	131	118	116	113	110		86	90	93	95
7		93	83	92	81	58	58		102	111	131	131		166	147	130	143	144		149	92	88	92	92
8	110	116	92	93		67	93	97	106	97	110	124	124	122	132	123	128	129	122	84	92	91	92	92
9		83	94	80		58	54	95	96	110	121	144	173	174	166	163	172	172	142	140	111			
10	123	112	92	81	67	47	51	87	99	108	116	115	151	137	137	131	131	151	127	145	115	140	149	139
11	133	120	118	131	92	61	60	94	99	90		108	118	121	122	122	A	112	111	A	110	115	92	81
12	91	111	116	109	95	59	67	96	111	100	116	131	143	157	157	155	150	142	147	142	118	159	128	
13	81	79		94	82	72	70	109	111	102	115	116	124	148	150	142	153	166	174	129	70	96	82	
14		116		94	95		45	83	94	94	114	121	146	173	178	185	190	182	168	171	132	150	140	94
15	117	111	117	93	68	61	68	84	94	102	110	116	116	166	176	N	173	171	164	134	94	83	76	94
16	79	93	89	93	95	35	38	71	92	109	117	116	122	156	162	164	150	139	133		83	81	76	78
17		84	69	61	47	B	41	84	94	103	143	116	97	120	124	138	124	120	110	102	94	84	81	80
18	92	70	92	94	60	46	50	95	95	119	112	68	112	151	118	121	116	132	136	86	87	93	96	93
19	89	96	94	94	73	37	46	97	95	97	94	118	132	122	131	155	130	131		149	152	130	74	
20	93	116	93	72	71	64	70	105	125	96	118	118	122	130	122	129	157	173	174		159	151	173	174
21	138	127	151	148	94	93		92	94	120	115	118	149	153	159	162	167	173	174	171	160	124	89	93
22	94	92	92	95	67	38	44	81	94	116	98	117	123	130	130	134	124	121	131	149	83	86	96	93
23	114	115	109	93	36	37	43	88	121	116	94	102	121	132	131	131		124	122	A	117	119	152	111
24	109	100	70	81	70		115	84	111	116	96	114	121	123	134	122	146	148	138		141	140		155
25			116			67		94	95	92	81	117	124	130	133	132	132	131	131	A	117	118	140	116
26	126	89	82	62	69	62	68	94	100	114	123	122	124	143	144	147	152	131	122	112		100	116	94
27	94	87	58	60	61	56	54	94	101	115	117	130	142	148	131	171	150	148			122	90	93	94
28		93	95	70	59	42	45	96	116	124	120	138	163	180	192	187	187	180	174	171	121	122		127
29	116	119	116	93	94	94	94	97	122	150	131	132	151	164	180	186	170	157	140		149	141	133	
30	94	92	95	68	82	52	50	90	112	123	151	118	148	163	167	173	169	167	144	189	125	92	92	92
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	26	26	29	27	26	27	28	30	30	29	30	29	30	29	29	28	29	26	19	29	28	27	24
MED	94	94	94	92	70	58	57	93	99	108	115	118	124	148	137	142	150	144	137	142	117	98	94	94
U Q	116	115	116	94	82	64	70	96	111	116	119	124	147	160	164	162	162	166	164	171	128	127	128	112
L Q	90	89	92	72	60	46	46	84	94	97	101	116	121	123	130	127	129	130	127	129	92	90	92	91

HOURLY VALUES OF fEs AT Okinawa

SEP. 2000

LAT. 26°16.9'N LON. 127°48.4'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	25	35	38	28	G	G	G	G	G	40	19	G		40	51	G	G
2	G	G	G	G	G	25	G	35	44	47	42	47	G	G	42	37	38	51	150	52	84	89	76	41
3	29	G	G	G	G	G	G	36	46	53	48	55	66	50	G	37	41	49	44	89	67	28	31	26
4	G	G	36	24	G	G	33	38	47	64	52	77	67	75	62	74	44		28	46	27	G	G	G
5	G		G	G	G	G	G	38	42	36	G	38	G	G	G	37	67	49	40	32	38	G	98	G
6	G	G		G	G	G	G		34	48	58	62	G	G	69	G	43	60	57	84	34	42	26	38
7	24	G	G	G	G	G	G	30	37	56	38	36	36	G	G	38	35	44	34	G	46	G	G	G
8	G	G	G	G		G	G	28	35	34	37	37	G	G	G	35	36	43	38	34	G	G	G	G
9	G	G	G	G	G	G	42	38	40	38	37	G	41	37	G	G	42		36		23	G		G
10	G	G	G	G	G	G	G	G	33	34	36	G	G	G	G	38	40	44	38	34	24	G	G	G
11	39	G	G	G	G	G	G	34	44	46		G	G	G	G	94	124	78	149	142	79	74	G	27
12	24	G	G	G	G	G	G	28	43	49	38	G	38	G	37	39	34	35	32	G	G	G	G	
13	G	G		G	G	25	27	34	41	40	42	42	42	46	38	45	G	40	34	33	29	26	84	
14		50		G	G	G	25	37	86	79	80	49	G	80	67	66	80	50	45	43	42	46	64	66
15	56	62	45	46	27	G	G	38	37	58	45	60	40	43	G	G	40	36	31	43	34	G	G	G
16	36	G	G	G	24	G	G	32	50	40	39	G	G	G	G	40	32	36	31		11	G	G	G
17	G	G	G	G	G	B	G	38	47	46	46	G	G	G	G	G	34	27	33	24	42	G	G	G
18	G	G	G	G	G	G	G	100	35	31	34	G	G	G	G	37	38	40	29	G	G	G	38	G
19	G	G	G	G	42	G	G	25	30	G	G	G	G	G	G	57	66	70		G	27	G	44	
20	G	G	G	G	G	G	G	34	44	41	G	64	58	57	67	82	58	48	69		49	40	31	G
21	G	G	27	G	G	G		26	29	50	57	56	46	66	G	G	35	28	G	172	G	G	27	G
22	G	G	G	G	G	G	G	25	G	G	G	G	G	G	G	G	G	27	41	41	G	G	G	G
23	G	G	G	G	G	G	G	34	34	G	G	G	G	G	G	35		62	85	49	29	G	G	G
24	G	G	G	G	G	G	G	34	G	38	157	G	G	54	G	G	32	40	30		G	G		G
25		G	G			G		37	34	G	G	37	G	G	56	58	58	34	37	60	60	G	38	G
26	G	G	G	G	G	G	G	37	46	58	46	58	G	G	G	G	38	54	44	26		34	34	28
27	G	G	G	G	G	G	G	38	35	43	G	G	G	G	G	38	35	42			60	60	30	G
28		G	G	G	G	G	G	24	38	35	G	G	G	38	38	38	35	35	G	60	26	25		G
29	G	24	G	G	G	G	G	26	40	45	G	G	G	G	G	G	44	76	44		42	30	43	
30	25	G	G	G	G	G	G	G	34	40	G	G	G	G	G	G	68	51	68	110	42	33	30	28
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	29	27	29	28	29	28	29	30	30	29	30	30	30	30	30	29	28	28	23	29	30	27	26
MED	G	G	G	G	G	G	G	34	38	40	37	G	G	G	G	37	40	44	38	43	34	G	27	G
U Q	24	G	G	G	G	G	G	37	44	49	46	49	38	43	38	40	51	51	44	60	44	34	38	26
L Q	G	G	G	G	G	G	G	26	34	35	G	G	G	G	G	G	35	35	31	26	17	G	G	G

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT Okinawa

SEP. 2000

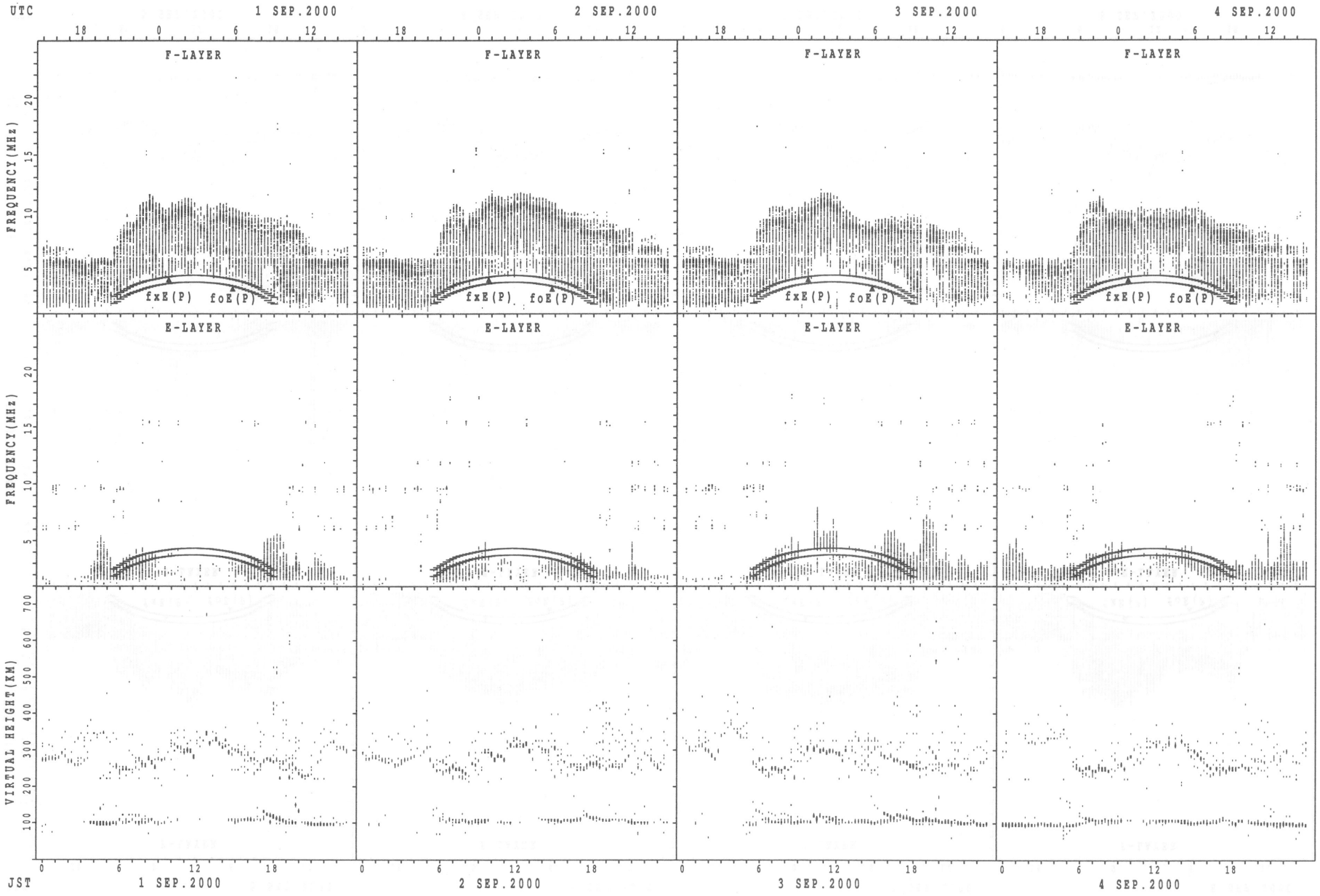
LAT. 26°16.9'N LON. 127°48.4'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	17	17	16	28	15	15	16	16	16	16	18	48	52	56	49	52	36	16	15		14	14	15	14
2	16	15	15	15	15	15	16	15	15	28	33	40	56	56	51	29	26	16	14	14	15	14	14	15
3	15	15	16	14	15	15	16	15	17	16	28	39	41	43	57	29	22	15	15	14	14	14	15	14
4	17	15	16	15	15	14	15	15	18	29	35	40	41	41	28	28	26		14	14	14	15	15	15
5	15		14	14	14	15	15	15	17	28	48	50	63	58	58	29	34	16	15	14	14	14	15	15
6	15	15		14	14	15	16		18	29	34	35	52	55	34	50	39	18	15	14	14	14	16	14
7	15	27	16	15	14	21	15	15	18	27	28	48	62	59	48	30	15	16	15	15	14	14	15	15
8	16	15	14	14		15	16	16	16		29		52	50	48	50	17	16	15	14	15	17	14	14
9	16	17	15	14	14	16	14	14	15	20	28	48	26	26	48	54	34	15	17	15	16	16		26
10	15	15	15	15	15	15	15	14	17	21	46	50	46	59	54	30	18	16	15	15	15	15	14	16
11	14	15	15	15	14	14	15	15	18	32		52	58	56	49	41	27	15	14	15	14	14	14	14
12	21	14	15	14	14	15	15	14	16	18	46	49	52	53	29	27	18	16	15	14	15	15	15	
13	15	15		14	16	14	14	15	16	23	34	35	35	33	30	28	42	18	15	14	14	15	15	
14		14		16	15		16	16	17	27	29	29	50	30	24	28	20	15	14	14	14	15	15	15
15	15	15	16	14	16	15	15	16	18	18	28	30	26	26	55	56	18	16	15	14	15	15	14	16
16	15	15	15	16	14	17	15	16	18	30	29	50	49	54	58	30	44	15	14		14	15	16	15
17	14	15	15	15	15	B	15	14	17	24	33	50	48	56	53	48	35	17	14	14	15	15	14	15
18	15	15	15	14	14	15	15	14	16	42	46	50	53	49	48	29	20	16	14	14	15	15	14	14
19	15	14	14	15	14	15	15	15	16	45	46	48	53	50	54	29	29	16		14	15	15	14	
20	15	15	15	14	15	15	15	15	16	30	44	45	40	43	40	39	29	16	14		14	15	14	15
21	15	15	14	15	15	15		15	15	32	37	37	50	38	55	47	28	29	22	14	16	15	14	18
22	15	18	16	22	17	15	16	28	32	42	46	50	54	57	49	44	45	18	14	14	15	15	15	15
23	14	14	15	15	14	15	15	15	16	46	48	49	47	61	50	47		15	15	14	14	15	15	14
24	15	14	14	14	15	15	15	15	33	29	48	49	50	46	49	50	22	16	16		15	24		15
25		14	15			14		21	20	36	64	30	50	47	43	44	20	16	16	15	15	15	14	14
26	15	14	15	15	14	14	15	15	16	20	46	47	48	61	47	46	26	16	14	14		14	14	14
27	15	14	15	16	15	15	15	16	17	20	46	49	53	48	35	46	28	17			14	14	14	16
28		15	16	15	14	15	15	18	16	39	47	45	55	47	50	30	36	17	22	14	14	18		20
29	15	16	15	15	14	14	14	24	35	21	43	52	48	52	48	48	35	17	16		14	14	15	
30	15	14	15	15	15	14	15	18	21	40	48	49	64	47	50	47	34	17	15	14	14	14	14	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	29	27	29	28	28	28	29	30	29	29	29	30	30	30	30	29	29	28	24	29	30	27	26
MED	15	15	15	15	15	15	15	15	17	28	43	48	50	50	49	42	28	16	15	14	14	15	14	15
U Q	15	15	16	15	15	15	15	16	18	34	46	50	53	56	53	48	35	17	15	14	15	15	15	15
L Q	15	14	15	14	14	14	15	15	16	20	29	39	47	43	43	29	20	16	14	14	14	14	14	14

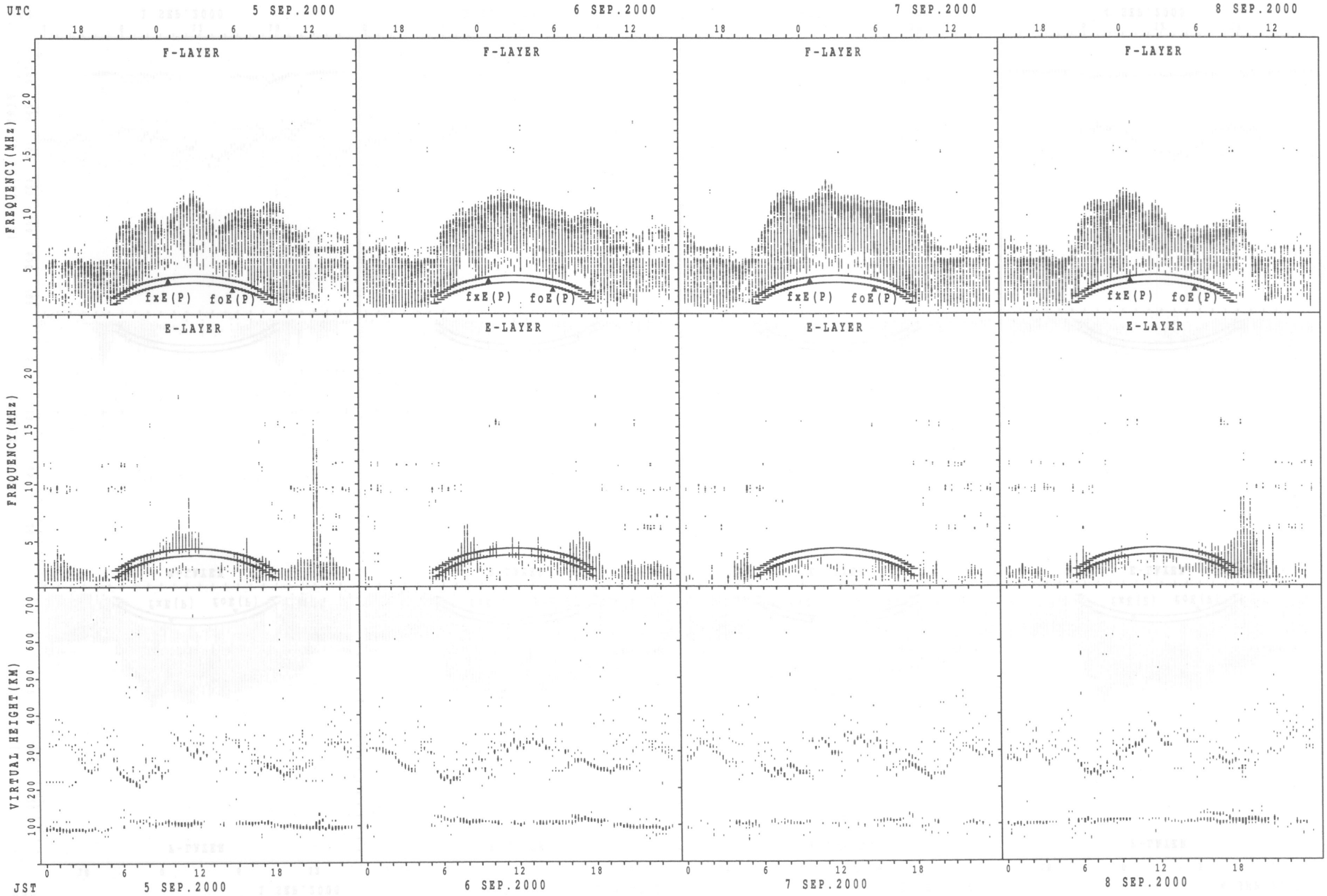
COMMUNICATIONS RESEARCH LABORATORY, JAPAN

SUMMARY PLOTS

IONOSPHERIC DATA of Wakkanai is not available due to the ionosonde trouble.

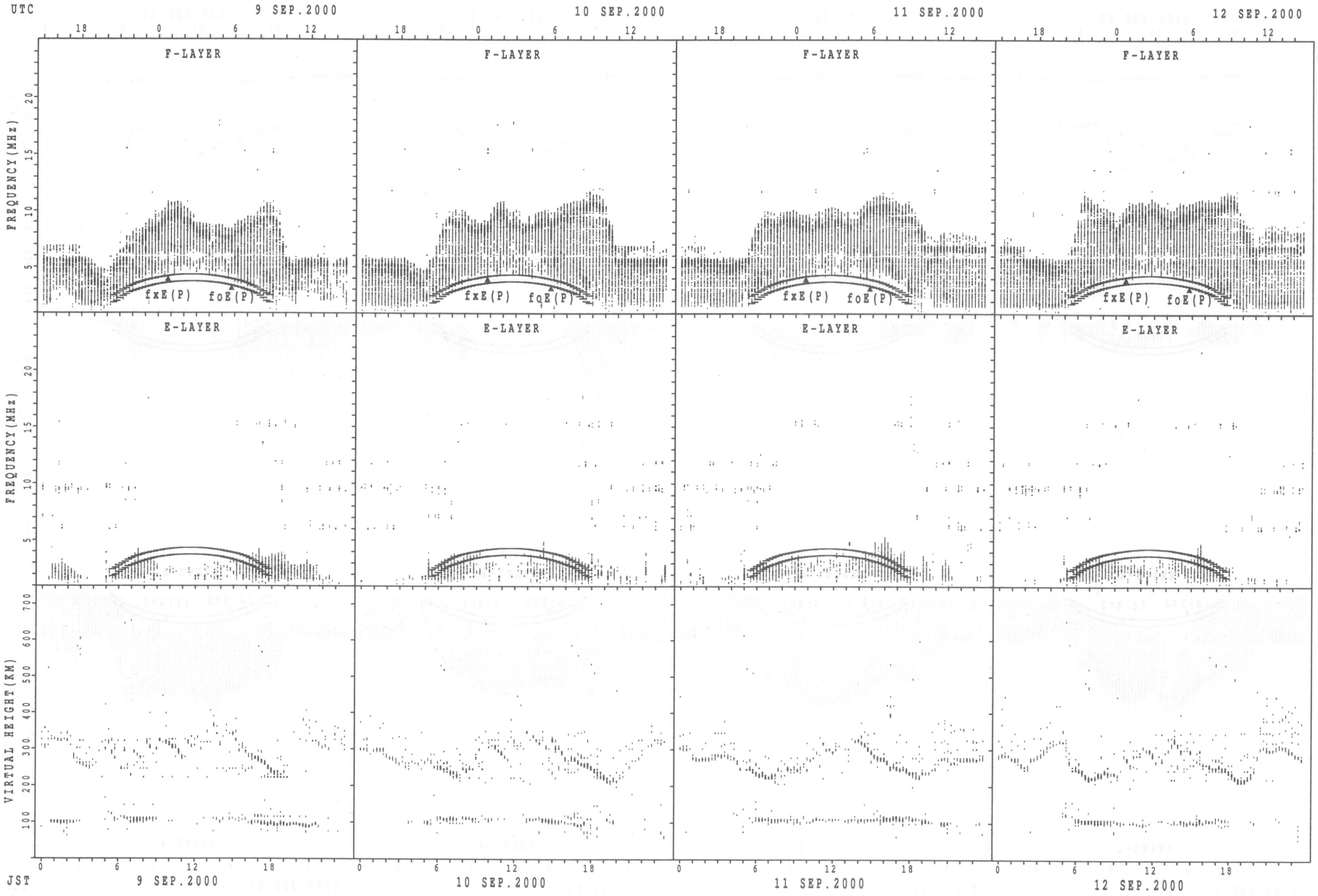

SUMMARY PLOTS AT Kokubunji
UTC
1 SEP.2000
2 SEP.2000
3 SEP.2000
4 SEP.2000
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



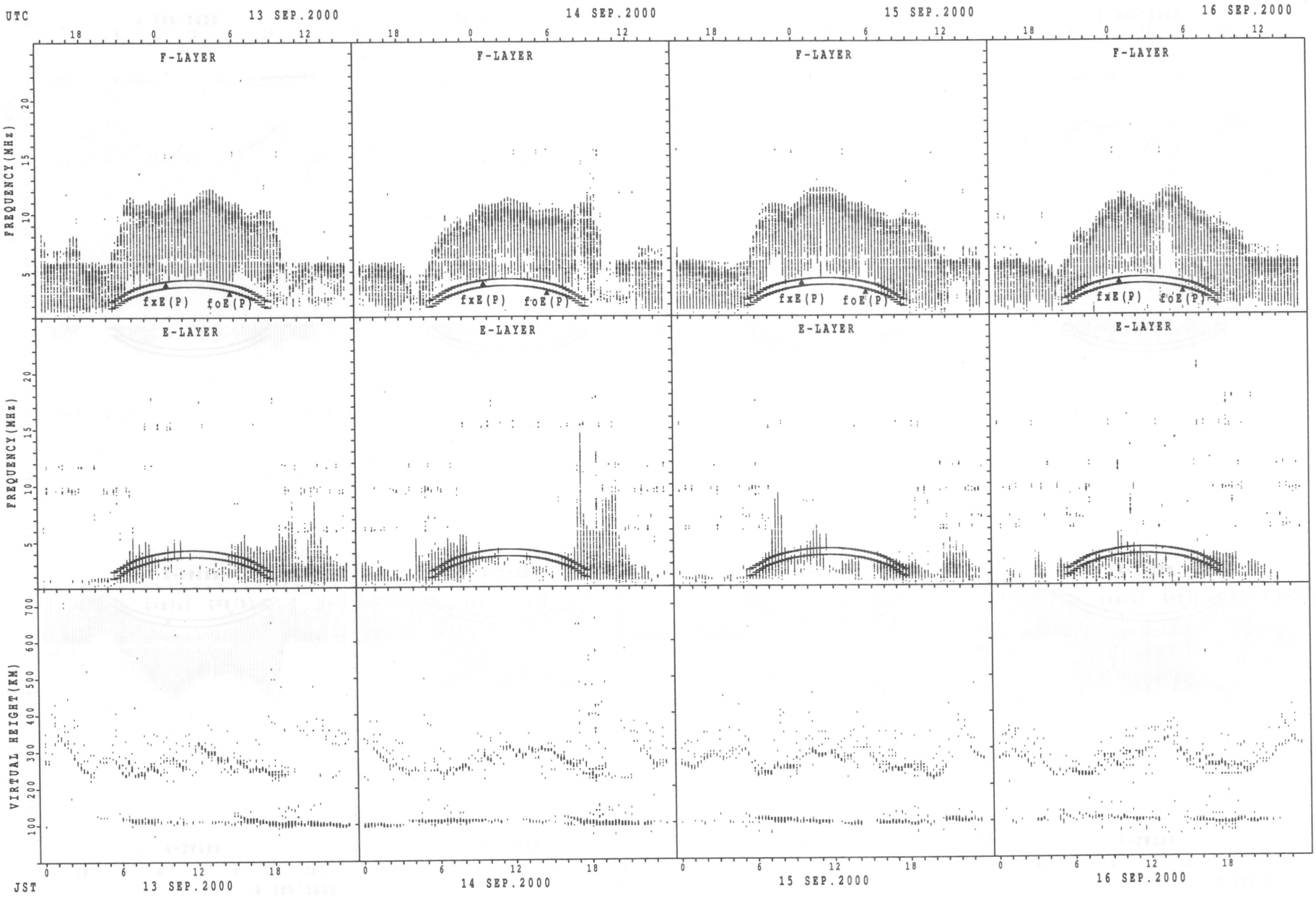
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



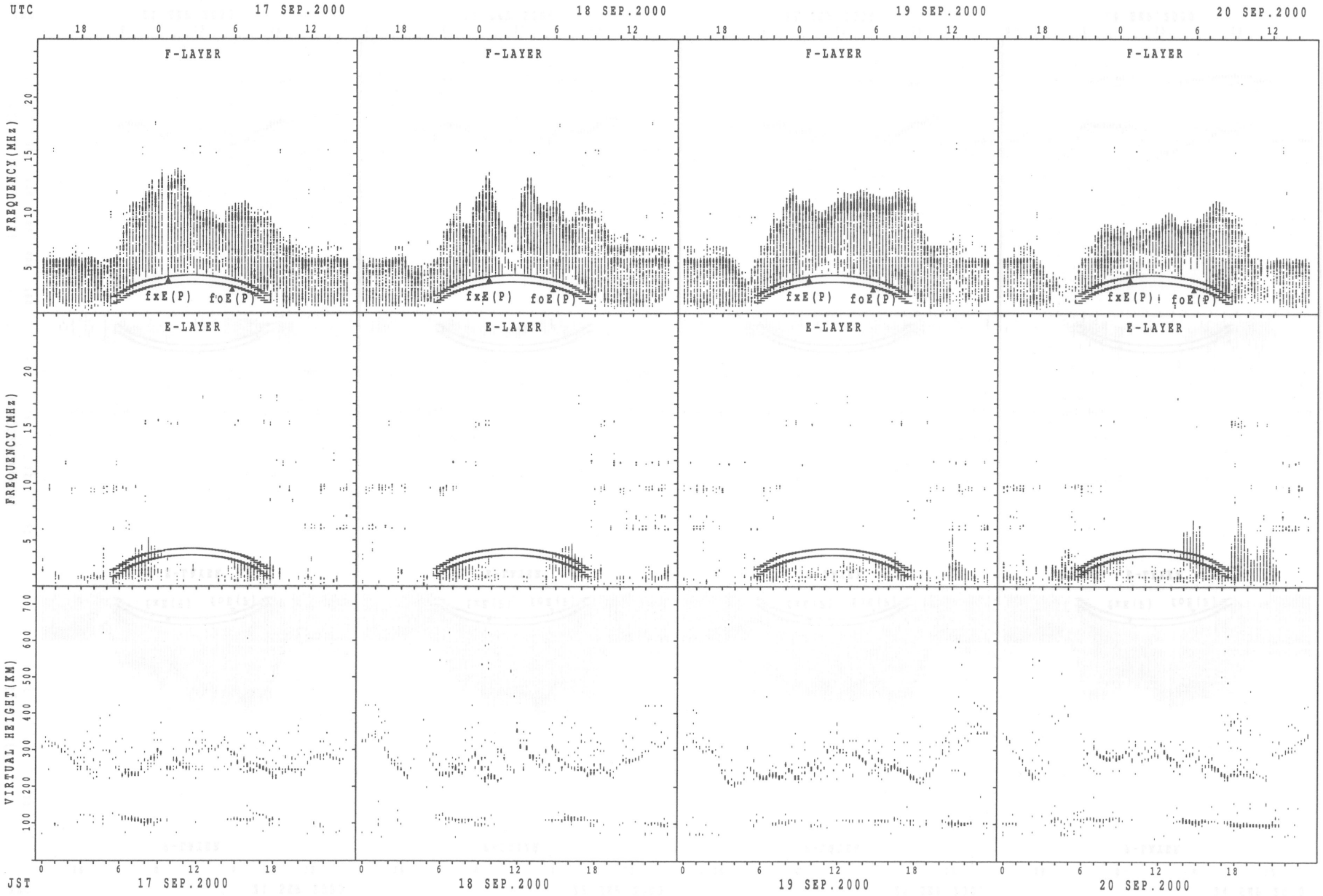
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



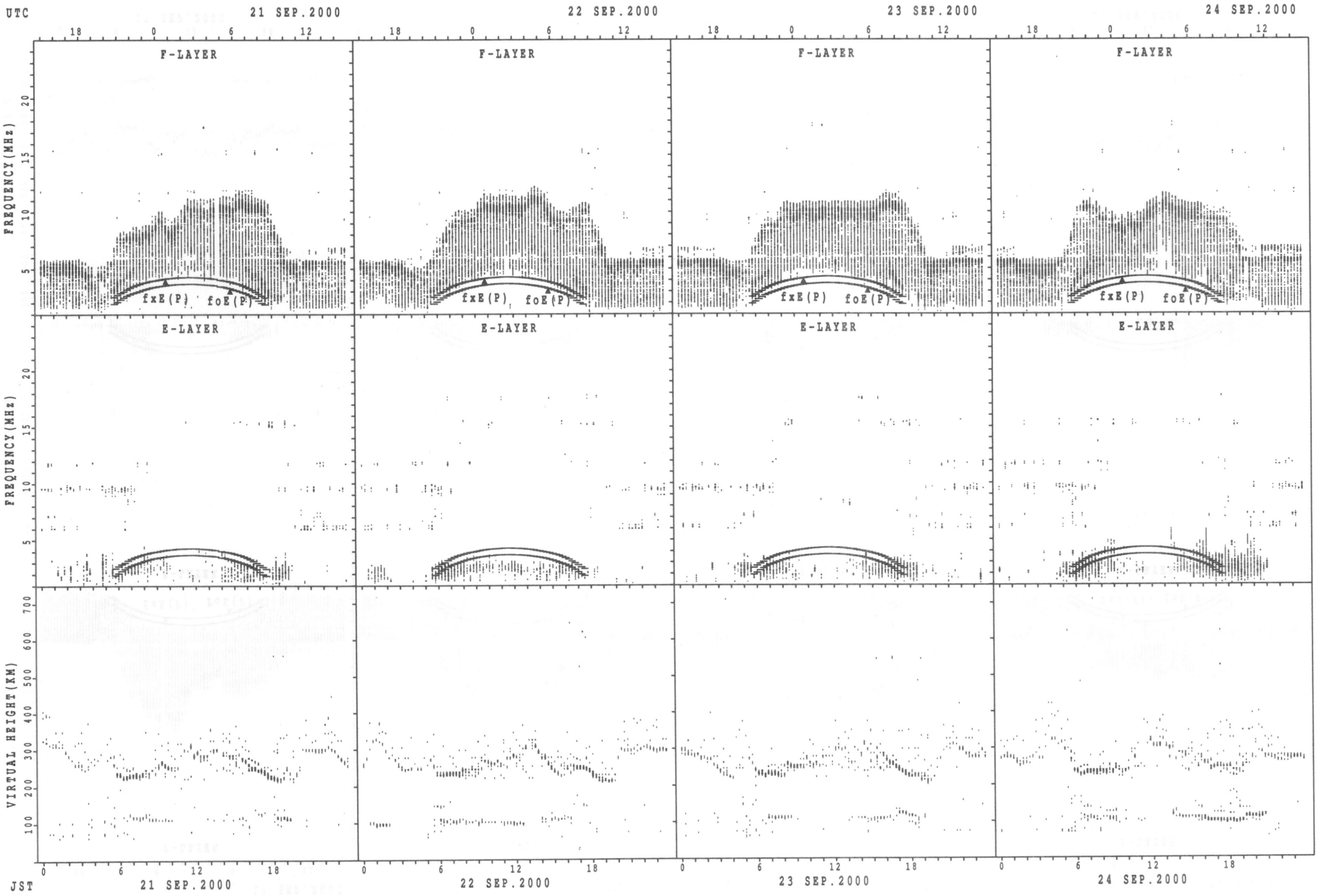
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



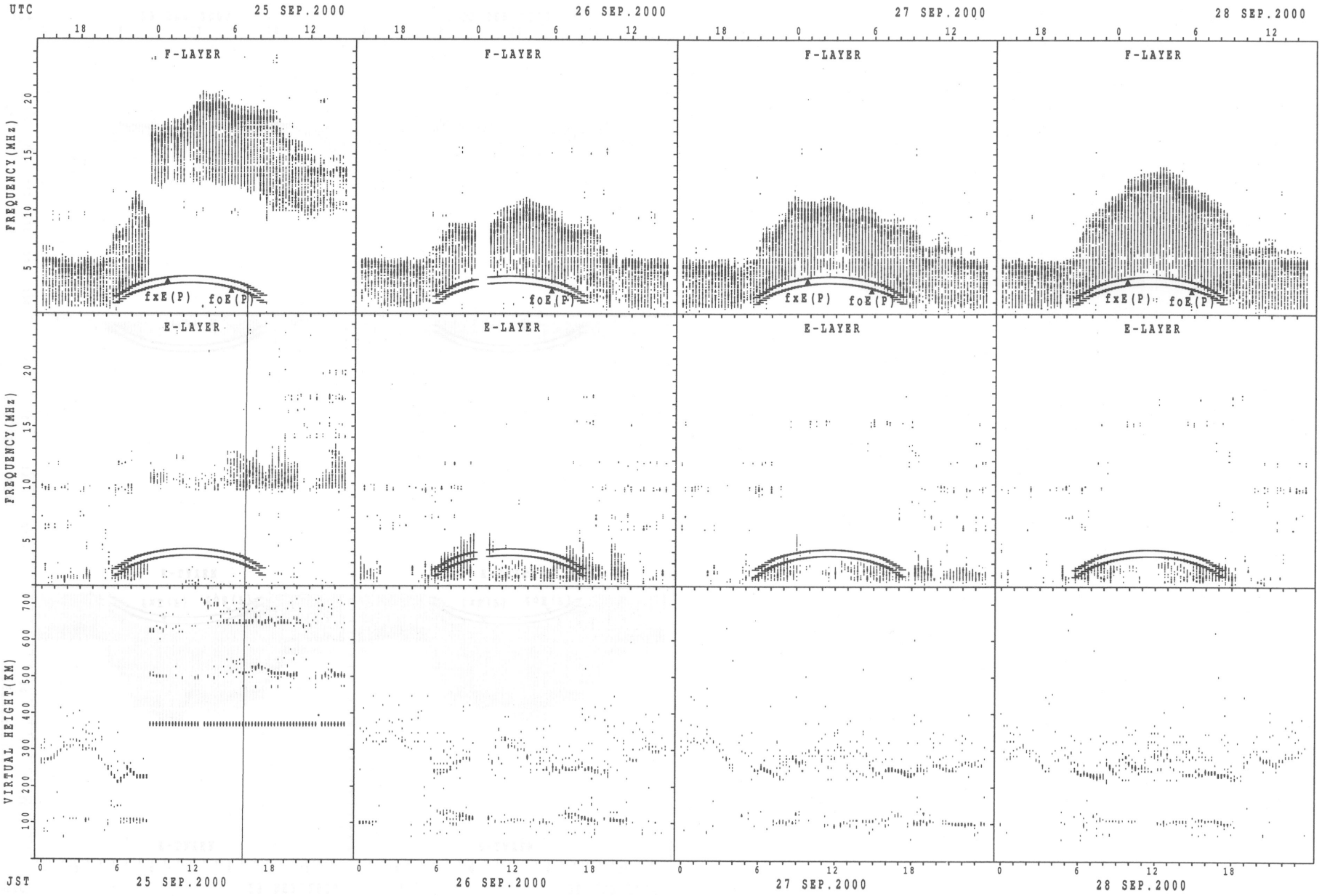
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



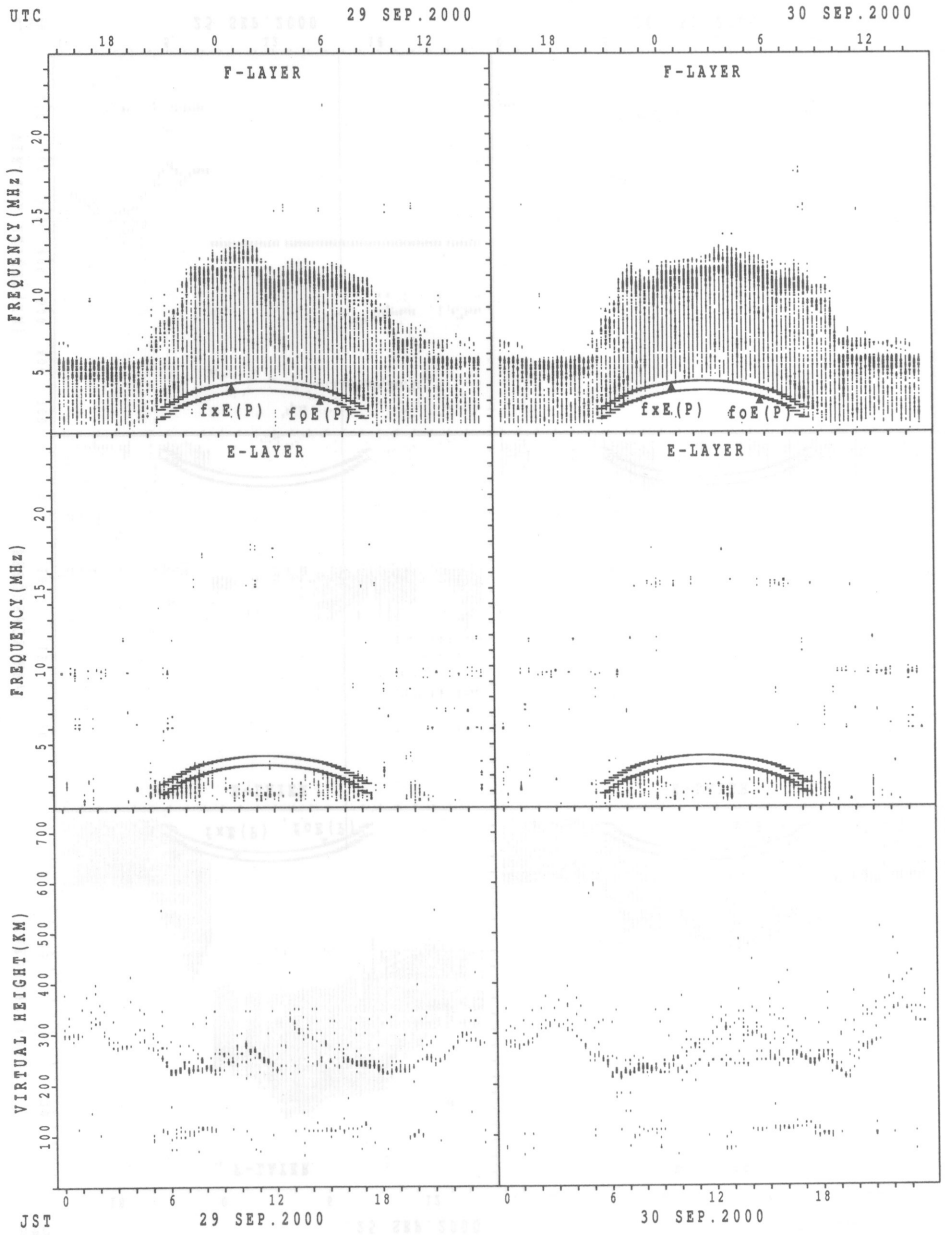
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

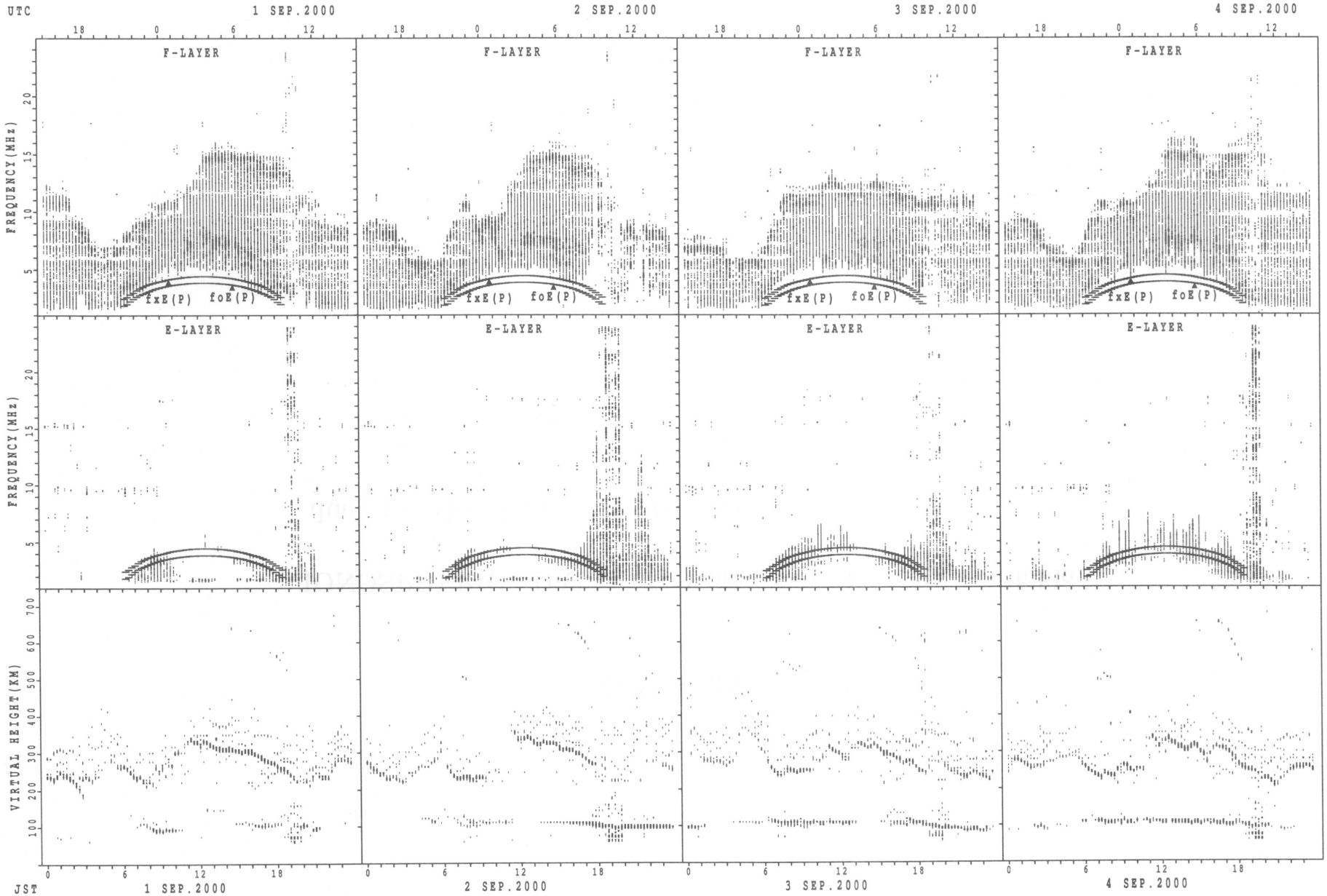


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS

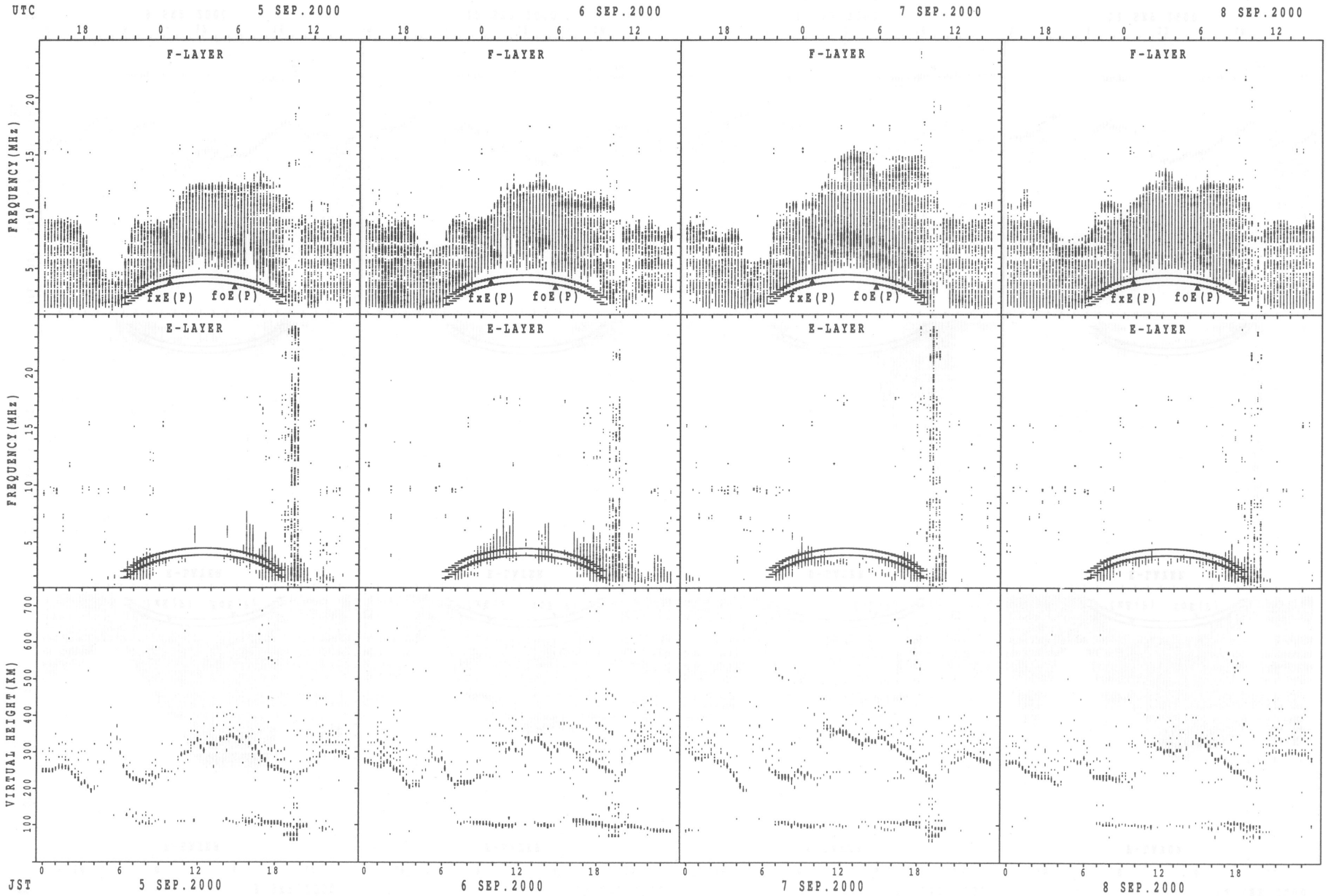
IONOSPHERIC DATA of Yamagawa is not available due to the ionosonde trouble.

SUMMARY PLOTS AT Okinawa



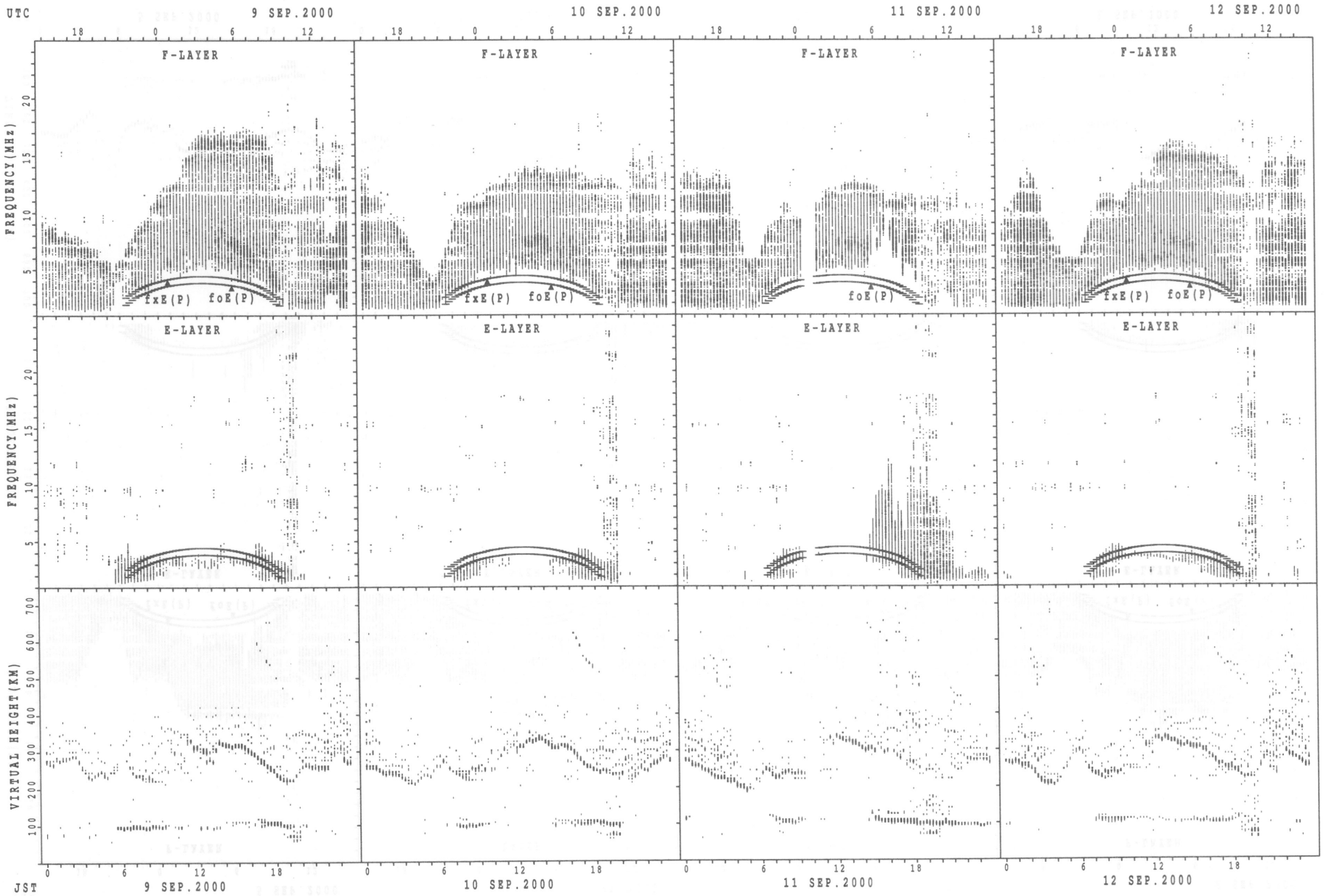
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



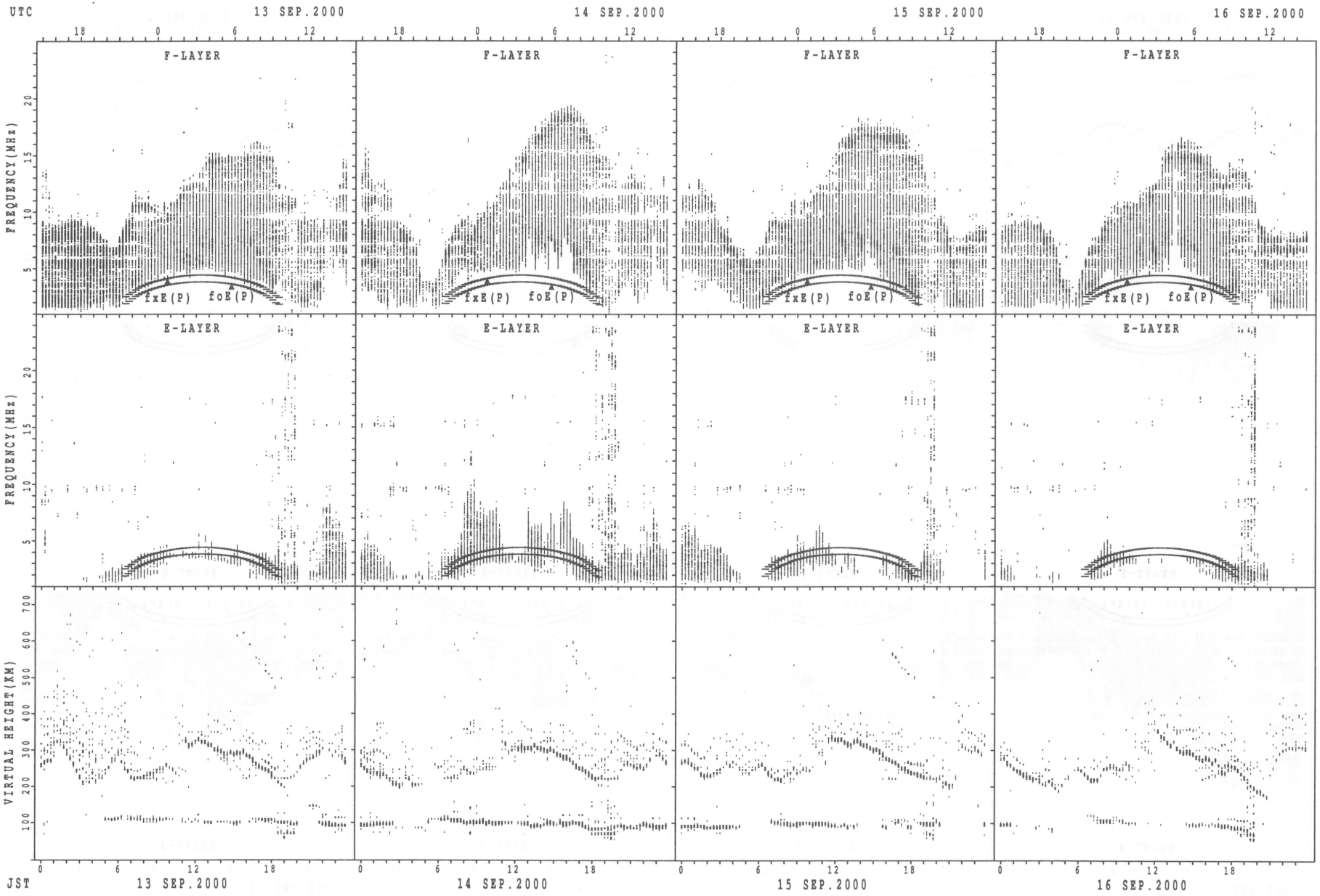
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



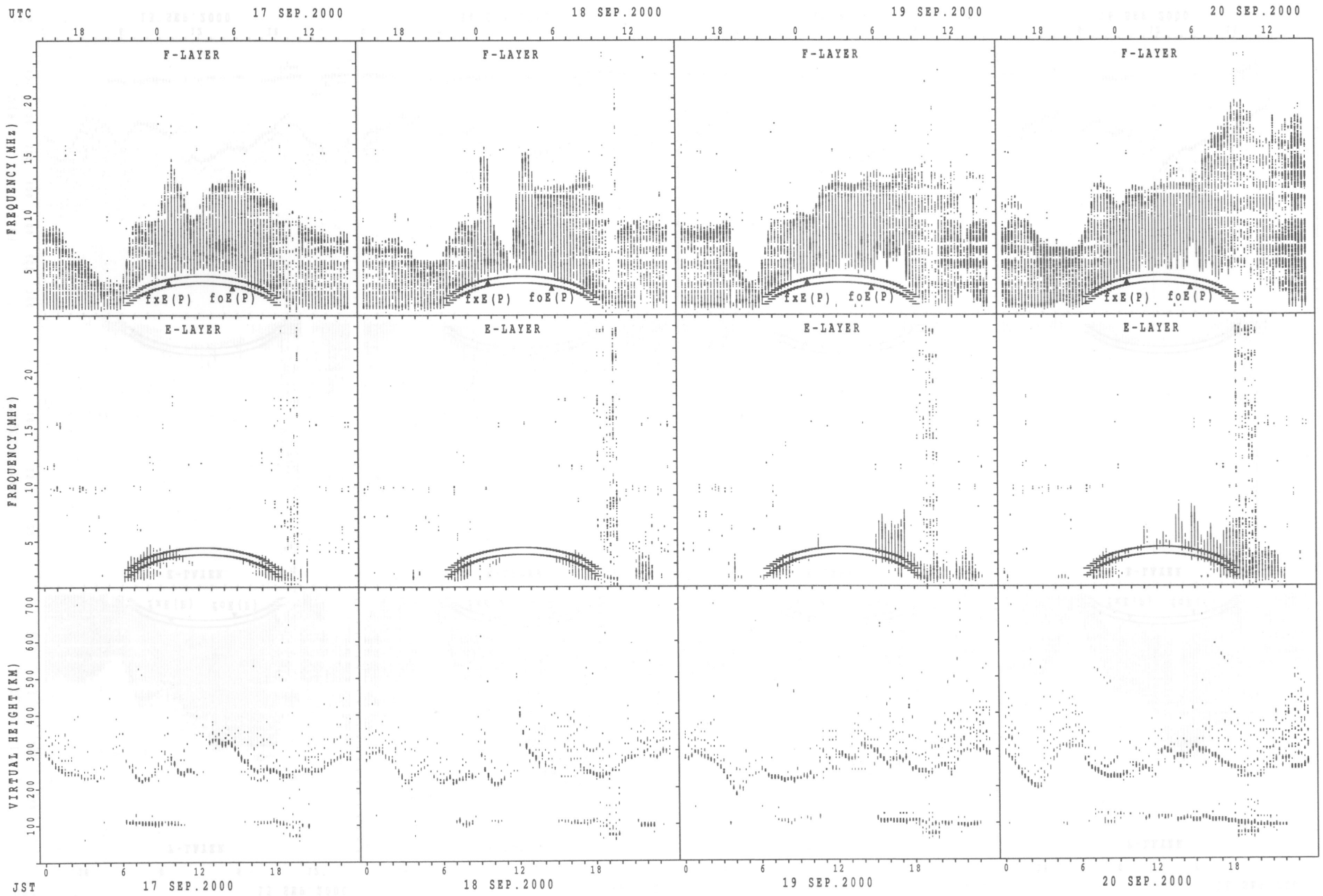
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



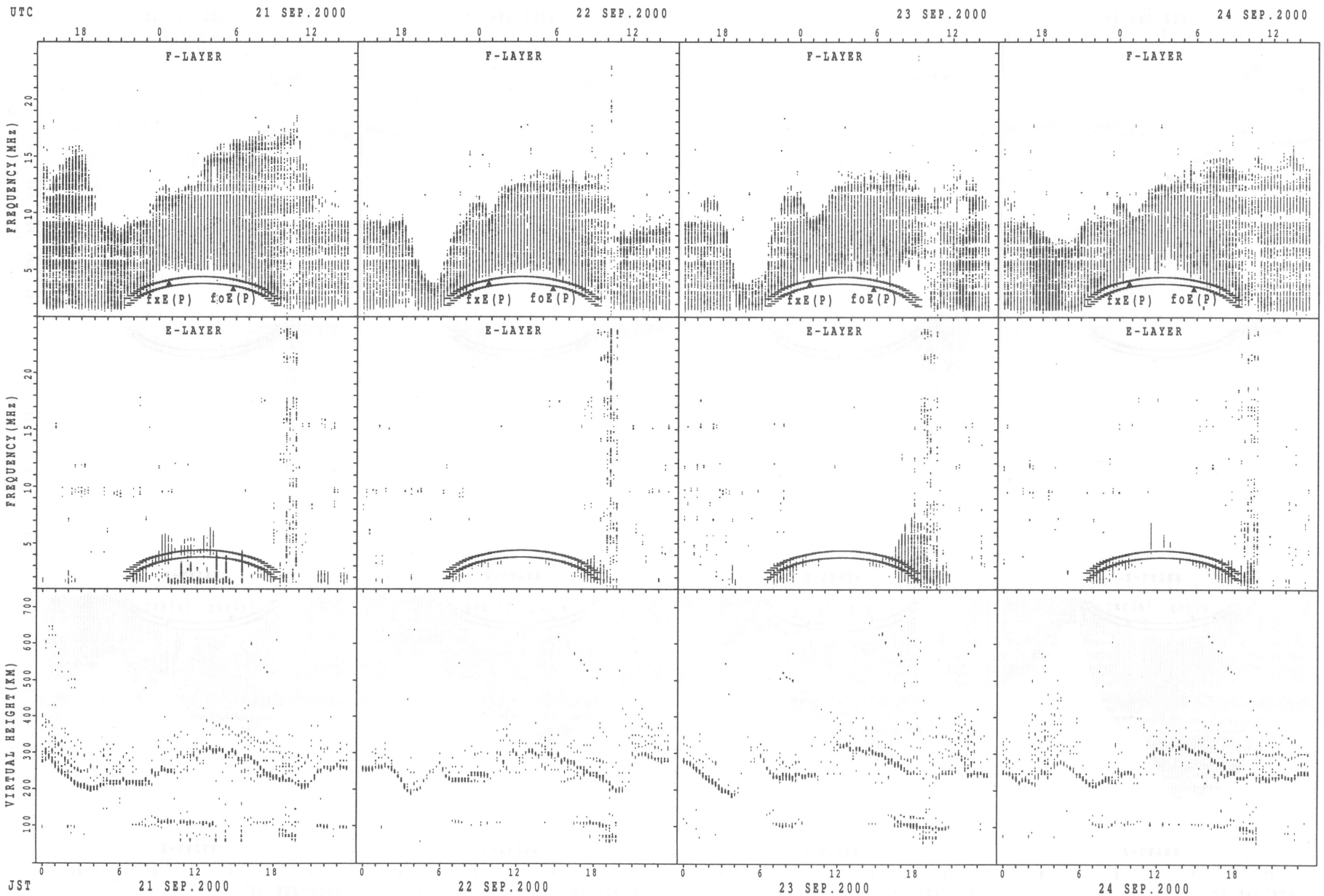
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



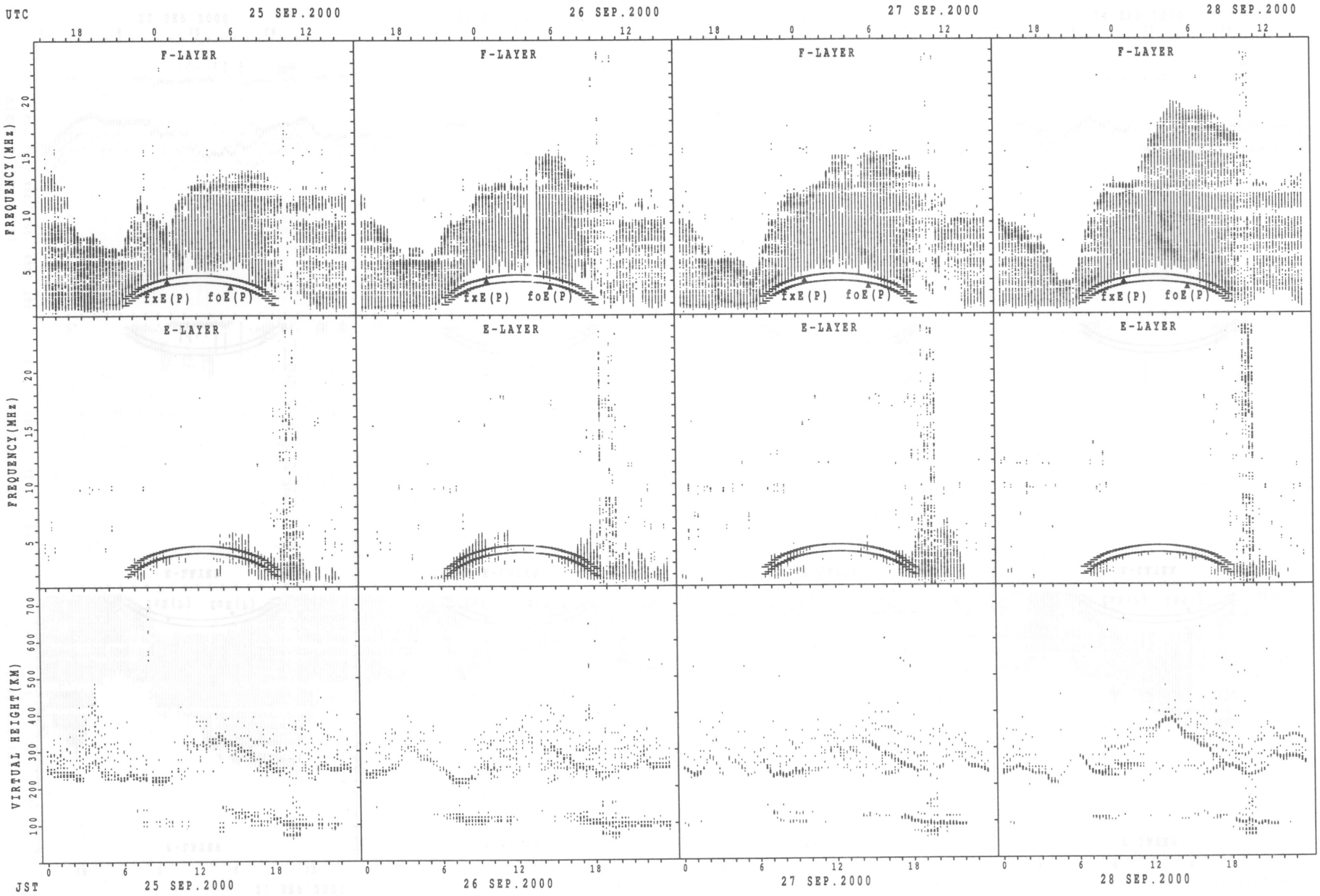
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



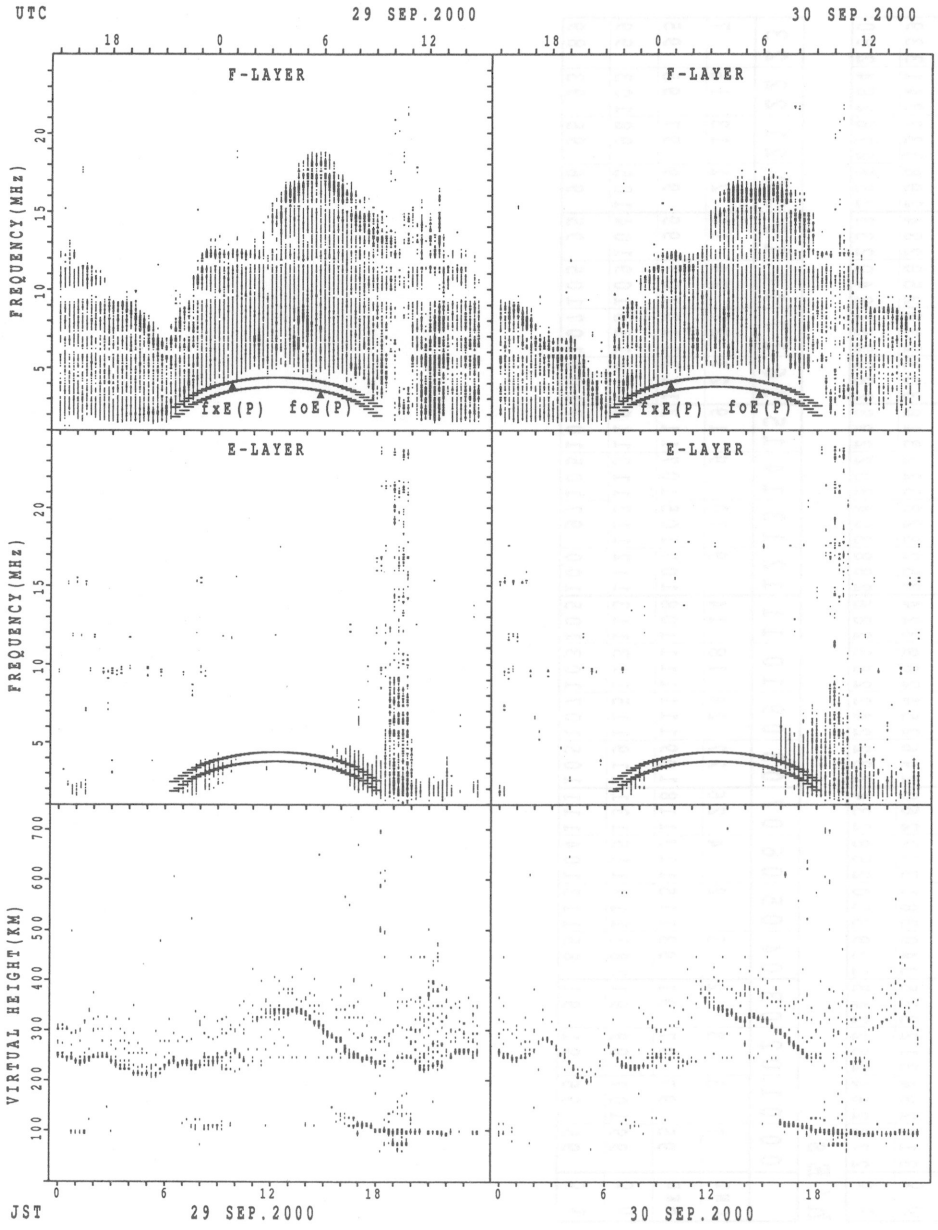
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

MONTHLY MEDIANS OF h'F AND h'Es

SEP.2000 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION Kokubunji LAT. 35°42.4'N LON. 139°29.3'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	6	3	3	4		2	26	30	29	29	29	30	30	29	29	30	30	30	28	22	17	13	9	10
MED	348	398	360	318		391	265	244	256	268	282	289	312	304	304	290	273	268	266	281	346	344	360	340
U Q	362	412	362	348		404	280	256	272	281	303	310	322	320	314	304	288	280	272	294	375	386	372	354
L Q	330	372	326	297		378	254	238	246	249	262	278	294	287	285	272	264	262	250	258	325	326	285	334

h'Es

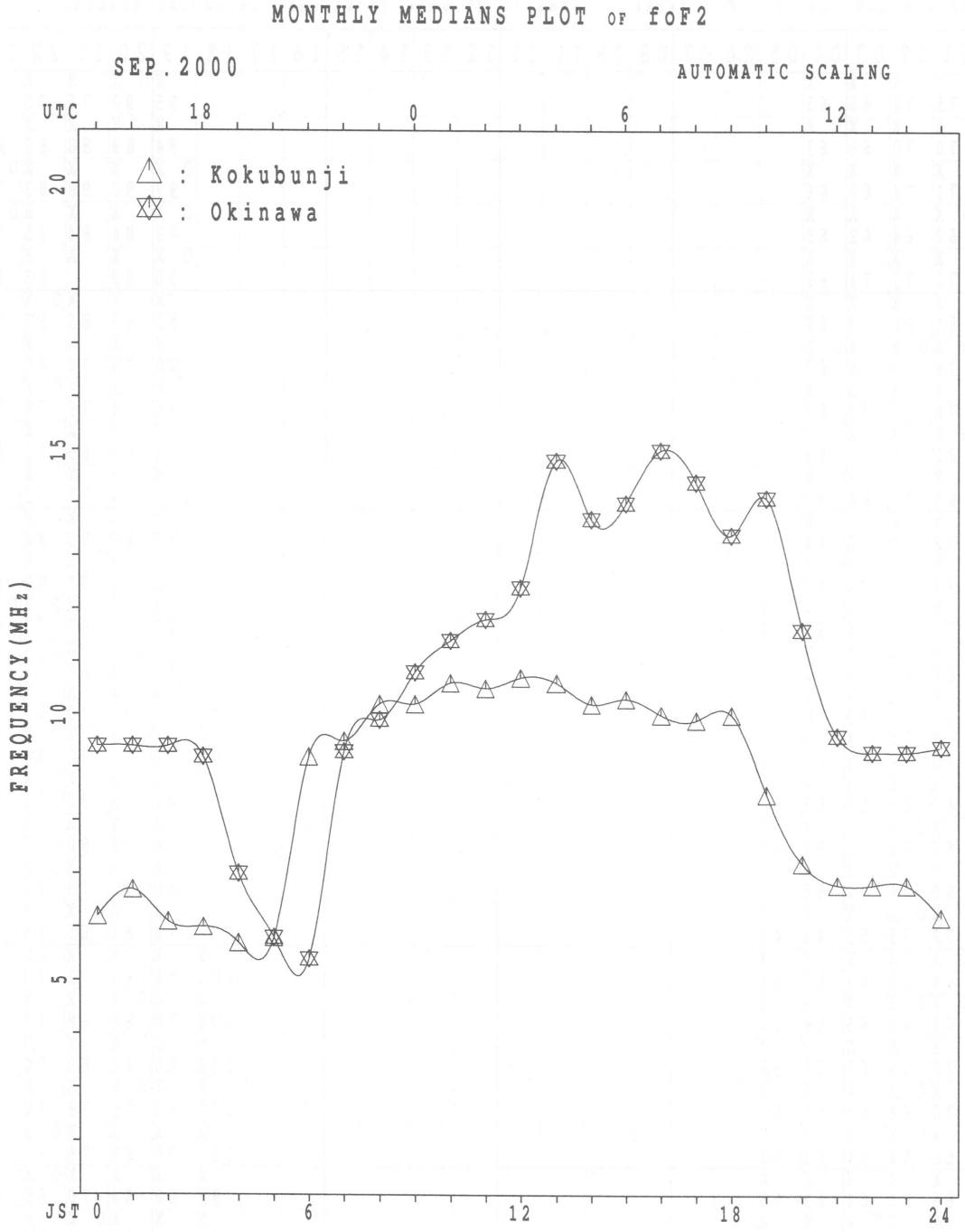
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	9	5	4	4	9	20	26	29	24	12	9	6	8	15	24	30	30	23	17	16	16	12	10
MED	99	99	97	103	106	97	115	113	109	110	108	103	103	108	107	111	113	115	107	109	106	104	104	100
U Q	103	101	100	104	111	113	131	125	113	115	113	114	111	112	111	118	119	121	113	113	109	106	105	103
L Q	95	96	94	97	100	92	111	107	105	105	105	102	99	107	105	105	107	111	105	102	100	97	100	97

h'F STATION Okinawa LAT. 26°16.9'N LON. 127°48.4'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	23	24	12	4	5	28	30	30	28	28	30	30	30	30	28	29	27	20	27	29	24	24
MED	298	278	276	272	258	376	338	247	238	248	261	304	328	318	316	304	295	266	248	245	274	296	306	313
U Q	318	294	312	335	340	381	377	260	246	254	289	324	352	328	322	318	303	276	258	284	298	337	341	339
L Q	278	264	252	245	239	350	288	234	232	242	253	286	288	304	302	298	280	261	240	233	256	276	284	280

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	3	3	2	3	2	4	26	27	26	18	14	9	10	9	19	27	27	24	16	21	13	15	7
MED	95	97	97	91	93	115	113	118	109	111	111	108	107	105	107	113	113	113	107	99	99	97	95	95
U Q	99	107	99	91	183	117	115	131	119	115	113	113	112	113	113	115	119	115	109	104	105	98	103	99
L Q	95	95	91	91	85	113	104	111	105	107	103	105	100	97	105	107	109	107	105	95	96	95	93	89


MONTHLY MEDIANS PLOT OF foF2
SEP.2000
AUTOMATIC SCALING
UTC
18
0
6
12
△ : Kokubunji
✡ : Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 80	X 75	X 72	X 66	X 63															X 95	O X 90	X 76	X 70	X 72
2	X 73	X 70	X 70	X 65	X 63															X 94	X 89	X 88	X 80	X 80
3	X 73	X 71	X 74	X 65	X 66															O X 97	X 90	X 88	X 83	O X 74
4	X 69	O X 62	X 64	X 62	X 63															O X 90	X 84	X 84	R 65	O X 75
5	R 53	X 71	X 71	X 71	X 62															O X 96	X 89	A	X 85	X 84
6	X 82	X 81	X 80	X 79	X 69															X 92	X 87	X 83	O X 87	X 92
7	X 88	O X 78	O X 79	X 74	O X 67															X 88	X 76	X 74	X 80	X 80
8	X 82	X 78	X 73	X 75	X 67															X 86	X 74	X 79	O X 78	X 80
9	X 76	O X 80	X 72	X 70	X 55															X 74	X 68	X 69	X 70	R 57
10	X 68	X 65	X 65	X 61	X 56															X 107	X 79	X 77	X 72	X 70
11	X 70	X 72	X 70	X 66	X 64															X 86	X 80	X 83	X 84	X 82
12	X 80	X 78	X 70	X 68	O X 63															X 98	X 80	X 90	X 89	X 89
13	X 86	X 76	X 78	X 76	X 64	X 62														X 67	X 60	X 67	O X 67	O X 66
14	O X 66	O X 66	O X 63	X 61	X 51															X 87	O X 68	X 68	O X 72	X 72
15	X 73	X 68	X 65	X 60	X 58															O X 101	X 80	X 70	X 70	X 71
16	X 71	X 70	X 68	O X 62	X 60	X 51													X 95	X 88	X 76	X 70	X 68	X 68
17	X 68	X 67	X 68	X 68	X 62															X 82	X 76	X 72	X 71	X 70
18	O X 64	X 63	O X 66	X 71	X 56	X 56														X 88	X 82	X 80	X 78	X 78
19	O X 75	R 69	X 74	X 72	X 58															X 80	X 77	X 79	O X 76	X 73
20	X 71	X 72	O X 73	X 55	X 48	X 47														X 78	X 61	O X 65	X 66	X 65
21	X 64	O X 64	X 65	X 63	X 55	X 56													X 101	X 76	X 65	X 71	X 70	X 74
22	X 68	O X 65	O X 66	X 65	X 58	X 56													X 108	X 79	O X 66	X 68	X 70	X 71
23	X 73	X 72	X 69	X 67	X 59	X 58													X 106	X 80	X 66	X 69	X 74	X 72
24	X 71	X 70	O X 64	X 61	X 61	X 67													X 102	X 80	O X 75	X 78	X 78	X 76
25	O X 74	X 68	X 64	X 64	X 63	X 68			C										X 111	X 95	X 86	X 76	O X 74	X 75
26	X 68	X 66	X 63	O X 64	X 63	X 65				C									X 92	X 69	R 64	X 70	O X 65	X 65
27	X 63	X 62	X 60	O X 64	X 60	X 58													X 93	X 76	X 82	O X 76	X 71	X 69
28	X 65	X 64	X 62	X 62	X 58	X 60													X 92	X 75	X 78	X 80	X 71	X 70
29	X 70	X 68	X 67	X 66	X 66	X 71													X 103	X 87	X 81	X 78	O X 74	X 75
30	X 73	X 71	X 65	X 64	X 68	X 67													X 106	X 88	X 78	X 70	X 70	X 72
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	14													11	30	30	29	30	30
MED	X 71	X 70	X 68	X 65	X 62	X 59													X 102	X 87	X 78	X 76	X 72	X 72
U Q	X 75	X 72	X 72	X 70	X 64	X 67													X 106	X 94	X 82	X 80	X 78	X 78
L Q	X 68	X 66	X 65	X 62	X 58	X 56													X 93	X 79	X 68	X 70	X 70	X 70

SEP. 2000 fxI (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2000 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	R 74	68	66	R 60	57	60	78	94	107	104	103	109	R 100	U R 101	R 102	98	94	92	R 92	88	84	70	R 64	66
2	67	R 64	U R 64	59	57	55	79	102	R 90	99	114	106	114	111	108	104	95	92	90	88	84	R 82	R 74	R 74
3	67	R 65	68	59	60	60	88	99	98	100	107	114	108	94	91	89	89	90	94	91	84	81	U R 76	R 68
4	R 63	U R 56	58	56	57	56	85	105	100	97	98	98	97	98	98	98	91	85	85	84	R 78	U R 78	R	69
5	R	R 65	R 65	R 65	56	55	U R 90	83	R 98	88	96	111	110	94	92	98	98	R 98	104	90	83	A	79	78
6	76	R 75	R 74	R 73	R 63	R 65	82	92	97	100	110	112	109	106	100	96	93	94	R 98	86	81	77	R 81	R 86
7	82	R 72	R 73	R 68	R 61	R 61	82	108	116	R 108	110	121	112	108	106	104	101	101	102	83	70	R 69	R 74	74
8	R 76	R 72	67	69	61	64	92	105	102	112	112	98	100	84	82	81	82	87	96	80	68	74	72	R 74
9	R 70	74	66	64	49	R 45	62	79	84	92	103	99	88	82	82	84	90	R 98	R 99	68	R 62	R 63	R 64	R
10	R 62	59	59	55	50	49	75	R 97	95	88	94	102	96	91	96	96	102	106	114	101	73	71	66	U R 64
11	U R 64	R 66	64	60	58	R 62	86	92	96	95	95	R 96	U R 99	96	R 98	108	108	102	99	80	R 74	R 77	U R 78	76
12	R 74	R 74	R 64	62	57	58	91	106	R 99	R 88	101	102	105	98	102	104	106	107	113	92	R 74	84	83	83
13	80	70	72	70	R 58	56	83	107	106	106	111	105	110	118	112	105	R 98	R 98	R 99	R 61	54	Z 60	R 61	R 60
14	R 60	R 60	57	55	R 45	R 46	R 72	R 85	92	97	104	106	108	106	98	100	R 98	103	R 99	81	U R 62	J R 62	R 66	R 67
15	R 67	R 62	R 58	54	52	52	R 75	102	104	101	111	117	118	113	104	102	94	92	R 98	R 95	J R 74	64	R 64	66
16	65	R 64	62	56	54	45	69	80	90	104	113	106	100	113	117	108	R 98	91	88	82	R 70	R 64	R 62	R 62
17	R 62	R 61	R 62	R 62	56	51	70	104	113	125	R 128	127	98	96	92	102	102	97	84	R 76	70	R 66	R 65	R 65
18	R 58	R 57	R 60	65	50	50	71	R 96	84	114	117	83	R 100	124	101	106	90	103	98	82	R 76	R 74	R 72	R 72
19	69	R	68	R 66	52	R 42	R 66	89	108	R 103	102	97	106	112	114	110	108	113	101	74	71	R 73	70	66
20	R 65	J R 66	67	49	R 42	R 41	58	77	84	80	77	80	85	93	88	90	100	101	92	R 72	56	59	R 60	58
21	58	58	59	57	49	50	R 75	82	84	93	89	97	108	107	110	109	113	110	95	71	R 59	R 65	U R 64	U R 68
22	R 62	59	U R 60	58	52	50	70	89	96	100	111	111	110	110	118	102	R 97	101	102	73	R 60	R 62	64	65
23	66	R 66	R 65	R 61	53	52	72	R 96	100	103	106	105	106	106	104	106	111	111	100	R 74	R 59	R 63	68	66
24	U R 65	R 64	58	55	55	61	R 92	108	100	95	91	95	105	113	108	103	103	R 98	R 96	R 74	R 69	72	72	70
25	68	R 62	58	58	57	J R 62	82	109	C	90	98	R 102	115	120	R 118	110	108	107	105	89	80	70	68	69
26	R 62	60	57	58	57	59	R 73	86	84	C	R 92	R 98	104	108	100	95	86	87	86	63	R	R 64	R 59	59
27	57	56	54	58	54	52	R 73	84	98	108	105	109	106	98	100	96	90	93	87	70	77	70	R 65	R 63
28	59	58	56	56	R 52	54	R 76	94	105	113	126	130	133	133	126	115	110	101	R 86	68	R 72	R 74	65	R 64
29	R 64	62	R 61	R 60	60	65	84	102	R 117	121	127	126	111	115	117	113	113	107	R 97	81	R 75	72	68	R 69
30	R 67	R 65	59	58	62	61	83	108	110	112	115	116	119	124	121	116	110	112	100	82	72	U R 65	R 64	66
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	29	29	29	29
MED	R 65	R 64	62	59	56	55	77	96	98	100	106	106	106	106	102	102	98	100	98	81	72	R 70	R 66	67
U Q	70	R 67	66	64	58	61	84	105	106	108	112	112	110	113	112	108	108	106	100	88	78	R 74	R 73	73
L Q	R 62	60	58	56	52	50	72	86	91	94	98	98	100	96	98	96	93	92	92	73	R 65	R 64	R 64	R 64

SEP.2000 foF2 (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	L	L	L	L	U L 584	U L 564	L	L	L						
2							L	L	L	L	U L 564	L	L	L	L	L	L							
3						L	L	L	L	L	L	L	L	L	L	L	A	A						
4								L	L	L	L	L	L	L	L	L	L							
5									L	L	L	L	L	L	L	L	L	L						
6									A	L	L	U L 556	L	L	L	L	A	A						
7									L	L	L	U L 564	L	U L 584	U L 568	U L 516	L	L						
8								L	L	L	L	L	U L 564	L	U L 544	L	L	L	A					
9								L	L	L	L	L	L	L	L	L	L	L						
10							L	L	L	L	L	U L 576	L	L	U L 580	L	L	L						
11						L		L	L	L	L	L	L	L	L	L	A	L						
12							L			L	L	L	L	L	L	L	L							
13								A	A	L	L	L	L	L	L	L	A	A						
14							A	A	L	L	L	L	L	L	L	L	L	A						
15									A	L	L	A	U L 512	L	L	L								
16									L	L	L	L	L	L	B	L								
17									L	L	B	L	L	L	L	L	L							
18								L	L	L	L	L	U L 604	L	L	L	A							
19									L	L	L	L	L	L	L	L	L							
20							L	L	L	L	U L 504	L	L	L	L	A	L							
21									L	L	L	L	L	L	L	L	L							
22									L	L	L	L	L	L	L									
23									L	B	L	L	L	L	L	L	L							
24									L	L	L	L	L	L	L	L	A							
25									C	L	B	L	L	L	L	L								
26								L	L	C	L	L	L	L	L	L								
27									L	L	L	L	L	L	L	L								
28										L	L	L	L	L	L	L								
29									L	L	L	L	L	L	L	L								
30								L	L	L	L	L	L	L	L	L	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2	3	3	2	4	1								
MED											U L 534	U L 564	U L 564	U L 584	U L 566	U L 516								
U Q												U L 576	U L 604		U L 574									
L Q												U L 556	U L 512		U L 554									

SEP. 2000 foF1 (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2000 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	244	292	336	352	R	B	R	R	R	344	316	256	160					
2						B	236	284	UR 320	R	R	R	R	R	R	344	308	244	B					
3						B	220	292	UR 328	R	R	R	R	R	R	R	308	248	B					
4						B	224	288	332	A	R	R	R	A	A	R	308	224	B					
5						B	UR 224	312	340	R	R	R	R	B	R	360	A	244	B					
6						B	UA 212	284	332	R	R	B	A	R	A	R	312	248	B					
7						B	UR 216	292	R	R	R	R	R	B	R	R	R 316	236	B					
8						B	A	UR 296	A	A	B	R	R	R	R	R	UR 312	240	B					
9						B	208	R	R	R	R	B	B	R	R	R	304	236	B					
10						B	R	A	R	R	UR 384	R	R	UR 400	A	A	304	244	B					
11						B	A	A	R	UR 356	R	R	R	R	R	UR 344	292	224	B					
12						B	248	A	A	UR 360	R	R	R	R	R	UR 332	284	196	B					
13							204	276	320	A	R	368	R	R	R	UR 336	284	220	B					
14						B	B	A	A	A	R	R	R	A	R	UR 332	304	UA 208	B					
15						B	B	A	276	A	A	A	UR 380	R	UR 368	B	308	A	B					
16							204	A	A	A	A	A	R	R	B	UR 340	A	B						
17						B	B	A	304	R	B	R	R	B	B	UR 332	288	216	B					
18							220	272	UR 316	R	UR 372	R	R	R	R	UR 332	288	204	B					
19						B	B	296	332	R	R	B	R	R	360	R	276	B	B					
20							B	A	R	R	A	R	R	R	348	312	288	220	B					
21							196	280	332	360	R	B	R	B	UR 360	328	292	R						
22							200	268	UR 324	R	UR 384	R	R	R	R	R	288	R						
23							UR 188	292	332	B	B	B	R	R	360	UR 336	284	208						
24							184	292	340	UR 348	R	R	B	B	R	R	A	A						
25							224	276	C	R	B	R	B	R	R	348	292	220						
26							UR 188	284	UR 328	C	R	R	R	B	R	332	284	208						
27							B	288	328	R	372	B	R	R	R	R	292	188						
28							B	A	344	UR 376	R	B	R	R	R	UR 340	292	B						
29							B	288	320	R	R	B	B	R	R	UR 340	280	B						
30							188	296	328	R	R	B	R	B	R	UR 328	288	180						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							19	20	20	6	4	1	1	1	5	18	27	22	1					
MED							212	288	328	UR 358	UR 378	368	UR 380	UR 400	360	UR 336	292	222	160					
U Q							224	292	332	UR 360	UR 384				UR 364	344	308	244						
L Q							196	282	320	352	372				354	332	288	208						

SEP.2000 foE (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2000 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 19	E B 14	E B 16	19	J A 28	J A 38	G	35	38	39	42	E B 45	G	G	E B 23	G	G	30	J A 52	J A 34	J A 29	J A 22	J A 26	20
2	E B 17	19	E B 15	E B 15	E B 16	E B 16	29	32	36	J A 40	G	G 35	G 30	G	G	G	35	34	J A 28	J A 23	J A 18	J A 46	J A 21	22
3	20	18	18	18	18	J A 21	J A 26	33	39	J A 46	G	J A 54	60	46	G	40	J A 54	J A 44	J A 36	J A 74	J A 30	J A 24	J A 30	J A 26
4	J A 33	J A 48	J A 28	J A 23	J A 22	J A 24	30	33	42	J A 41	44	40	G	40	42	G 32	G 28	30	J A 23	J A 22	J A 30	J A 22	J A 61	J A 26
5	33	J A 43	J A 25	J A 20	23	19	26	G	38	J A 44	58	J A 62	J A 52	E B 52	G	J A 41	38	31	J A 20	J A 21	J A 29	J A 144	J A 28	J A 25
6	J A 22	E B 16	E B 16	E B 16	E B 15	J A 24	26	32	J A 60	39	49	E B 46	52	44	39	G	43	J A 49	J A 30	22	J A 24	J A 23	J A 24	J A 25
7	20	E B 16	E B 16	E B 14	J A 24	J A 26	G	G 24	G 28	G 34	G	G 33	G	E B 51	G 22	G 20	G	29	21	19	E B 16	E B 16	J A 22	21
8	J A 20	J A 20	J A 21	J A 22	21	J A 19	45	G 24	43	46	E B 47	J A 50	G	G 36	G 29	42	39	J A 39	J A 52	J A 80	J A 52	J A 22	J A 18	24
9	E B 14	J A 25	25	19	E B 15	24	29	J A 30	G 24	G	G	E B 43	E B 46	G	G	G	34	J A 39	J A 34	J A 32	J A 23	30	E B 17	E B 23
10	E B 16	E B 15	E B 13	E B 16	22	20	29	32	37	39	G 31	G	G	G	40	38	33	27	J A 22	E B 15	E B 15	E B 15	E B 15	E B 16
11	E B 15	E B 15	E B 14	E B 14	19	22	31	30	G	38	G	G	G	G	G	38	J A 47	J A 32	J A 22	37	E B 15	J A 26	E B 15	E B 16
12	E B 14	E B 15	18	E B 13	E B 16	20	31	J A 31	36	G 28	G 30	G 28	G 26	G	G	38	33	27	J A 21	E B 16	19	E B 16	E B 16	E B 15
13	18	E B 16	19	18	21	22	J A 25	J A 50	J A 46	37	G	39	44	G	G	42	J A 42	J A 42	44	J A 48	J A 31	J A 62	J A 39	J A 34
14	J A 26	J A 19	J A 22	20	21	J A 28	J A 40	J A 47	J A 51	39	40	G	G	J A 41	G 28	G 23	35	J A 77	J A 56	J A 78	J A 98	J A 37	J A 22	E B 14
15	J A 19	18	19	E B 15	20	J A 23	23	J A 39	J A 68	38	J A 46	56	G 26	G 30	G 33	E B 37	J A 32	J A 28	J A 25	J A 23	20	J A 33	J A 39	J A 23
16	E B 14	22	E B 18	34	E B 15	J A 26	24	29	38	J A 41	42	46	G 37	G	E B 63	G 28	30	J A 33	J A 30	J A 24	J A 26	J A 22	20	E B 14
17	E B 16	J A 18	E B 16	20	J A 16	20	J A 23	31	34	41	E B 48	G	G 31	E B 42	E B 44	G	32	26	J A 24	E B 16	E B 15	E B 16	19	E B 13
18	E B 16	E B 14	E B 13	19	E B 16	E B 14	G	G	G	G	G	G	G	G	G	38	39	29	J A 20	E B 14	21	E B 16	21	19
19	19	E B 14	E B 15	E B 15	E B 15	E B 16	26	G	35	G	G 22	E B 44	G	G	38	G	30	J A 25	J A 22	J A 18	22	J A 50	26	E B 16
20	21	22	18	18	J A 24	20	28	30	G	G	38	G	G	G	J A 54	J A 54	G 27	G 19	J A 50	J A 42	J A 33	J A 44	E B 15	E B 19
21	18	E B 16	E B 16	E B 16	E B 14	E B 16	G	G	39	G	G	E B 46	G	E B 44	41	G	G	26	20	J A 34	E B 14	E B 14	E B 16	E B 15
22	E B 14	J A 23	20	E B 16	E B 16	20	26	32	G 26	G 32	G 29	G 34	G 32	G	G	G	G	25	E B 14	E B 16	E B 13	E B 16	E B 16	E B 15
23	E B 15	E B 16	E B 16	E B 13	E B 15	J A 22	G	32	G	E B 46	E B 48	E B 43	G	G 27	G	G	33	28	J A 24	E B 23	J A 12	E B 15	E B 16	E B 16
24	E B 15	E B 16	E B 15	E B 14	E B 16	E B 15	28	36	40	43	44	G 25	E B 46	E B 50	G 26	42	J A 43	J A 32	J A 34	38	J A 46	E B 16	E B 16	E B 15
25	E B 15	E B 16	20	19	E B 15	E B 16	G	G	C	40	E B 64	45	E B 44	44	43	42	36	J A 35	J A 53	J A 53	J A 32	E B 16	21	J A 50
26	J A 32	J A 20	E B 16	E B 14	E B 16	E B 16	26	34	J A 50	C	J A 52	45	G	E B 44	G	G	40	J A 31	J A 35	J A 20	J A 36	E B 16	E B 14	22
27	E B 16	E B 14	E B 15	E B 14	E B 14	E B 16	26	G	36	J A 52	44	E B 44	G 28	G 30	E B 24	18	G	24	J A 19	J A 27	E B 16	J A 23	J A 23	J A 20
28	23	E B 15	E B 15	E B 16	E B 14	E B 16	22	31	G	G	G	E B 44	G	G 33	G	G	G	26	24	E B 14	E B 16	21	E B 16	E B 15
29	E B 16	E B 16	E B 16	E B 16	E B 16	J A 25	22	35	34	G	G	E B 44	E B 44	G	G	G	G	24	E B 16	E B 16	J A 24	E B 16	E B 16	E B 14
30	E B 16	E B 16	E B 16	E B 14	E B 16	E B 16	23	G	G	43	42	E B 41	G	E B 42	G	G 18	G	24	J A 27	E B 15	E B 16	E B 27	E B 16	E B 16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	18	E B 16	E B 16	E B 16	E B 16	20	26	31	36	39	E G 39	G 43	G	G	G	G	33	30	J A 24	J A 23	J A 22	J A 22	20	E B 19
U Q	J A 20	J A 20	19	19	21	J A 24	29	33	J A 41	42	46	45	44	E B 44	39	38	39	J A 34	J A 35	J A 37	J A 30	J A 30	J A 24	J A 23
L Q	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	G 22	G	G	G	G	G	G	G	G	G	G	26	21	E B 16	E B 16	E B 16	E B 16	E B 15

SEP.2000 foEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	E B 14	E B 16	E B 14	16	29	G	33	37	U Y 39	42	E B 45	G	G	E B 23	G	G	28	44	24	E B 16	18	22	E B 15
2	E B 17	E B 15	E B 15	E B 15	E B 16	E B 16	25	32	36	39	G	G 34	G 30	G	G	G	33	26	21	18	E B 15	38	18	E B 16
3	16	15	16	E B 15	14	16	24	U Y 33	39	46	G	52	55	41	G	39	50	37	30	52	28	21	21	22
4	25	34	20	17	18	16	26	33	41	40	42	U Y 40	G	U Y 40	40	G 32	G 28	28	19	16	22	18	40	23
5	28	34	19	17	E B 15	E B 14	24	G	38	43	56	48	42	E B 52	G	39	U Y 38	G 23	18	18	22	A A 144	20	23
6	17	E B 16	E B 16	E B 16	E B 15	14	24	U Y 32	56	U Y 39	48	E B 46	U Y 51	U Y 44	U Y 39	G	40	46	25	16	19	18	20	22
7	17	E B 16	E B 16	E B 14	20	19	G	G 23	G 28	G 34	G	G 33	G	E B 51	G 22	G 18	G	27	19	16	E B 16	E B 16	E B 16	16
8	E B 14	18	E B 15	16	E B 14	16	41	G 24	42	42	E B 47	44	G	G 36	G 29	41	39	34	48	59	46	20	18	23
9	E B 14	18	E B 15	15	E B 15	E B 16	23	29	G 24	G	G	E B 43	E B 46	G	G	G	33	33	21	29	20	25	E B 17	E B 23
10	E B 16	E B 15	E B 13	E B 16	20	16	23	29	U Y 37	U Y 39	G 31	G	G	G	U Y 40	37	33	25	17	E B 15	E B 15	E B 15	E B 15	E B 16
11	E B 15	E B 15	E B 14	E B 14	E B 16	14	23	U Y 30	G	U Y 38	G	G	G	G	G	38	42	31	20	34	E B 15	19	E B 15	E B 16
12	E B 14	E B 15	E B 16	E B 13	E B 16	E B 15	G 23	30	35	G 28	G 29	G 28	G 26	G	G	37	32	24	18	E B 16	E B 14	E B 16	E B 16	E B 15
13	16	E B 16	E B 15	E B 16	E B 16	E B 16	23	44	45	U Y 37	G	U Y 39	44	G	G	42	40	40	41	45	29	27	29	22
14	21	16	E B 14	E B 16	16	21	30	33	38	U Y 39	40	G	G	41	G 28	G 23	35	50	36	54	34	E B 15	17	E B 14
15	E B 15	E B 15	E B 16	E B 15	E B 15	E B 16	23	33	63	38	43	55	G 26	G 30	G E B 30	E B 37	G 23	25	18	E B 15	E B 16	18	24	17
16	E B 14	E B 16	E B 18	29	E B 15	E B 15	22	U Y 29	U Y 38	37	U Y 42	44	G 37	G	E B 63	G 28	U Y 30	30	27	17	23	18	E B 16	E B 14
17	E B 16	17	E B 16	E B 16	15	E B 16	22	U Y 30	U Y 34	U Y 41	E B 48	G	G 30	E B 42	E B 44	G	31	26	20	E B 16	E B 15	E B 16	E B 12	E B 13
18	E B 16	E B 14	E B 13	15	E B 16	E B 14	G	G	G	G	G	G	G	G	G	38	37	27	E B 16	E B 14	E B 15	E B 16	E B 16	E B 14
19	E B 16	E B 14	E B 15	E B 15	E B 15	E B 16	24	G	34	G	G E B 22	E B 44	G	G	U Y 38	G	30	23	18	16	16	20	22	E B 16
20	E B 14	E B 16	E B 14	E B 16	E B 14	E B 16	25	U Y 30	G	G	U Y 38	G	G	G	52	50	G 26	G 19	42	20	30	E B 14	E B 15	E B 19
21	16	E B 16	E B 16	E B 16	E B 14	E B 16	G	G	38	G	G	E B 46	G	E B 44	U Y 41	G	G	24	E B 15	31	E B 14	E B 14	E B 16	E B 15
22	E B 14	19	18	E B 16	E B 16	E B 16	24	30	G 26	G 30	G 29	G 34	G 32	G	G	G	G	24	E B 14	E B 16	E B 13	E B 16	E B 16	E B 15
23	E B 15	E B 16	E B 16	E B 13	E B 15	E B 16	G	30	G	E B 46	E B 48	E B 43	G	G 27	G	G	31	23	20	23	E B 12	E B 15	E B 16	E B 16
24	E B 15	E B 16	E B 15	E B 14	E B 16	E B 15	24	35	38	42	42	G 25	E B 46	E B 50	G 26	U Y 42	41	28	22	36	22	E B 16	E B 16	E B 15
25	E B 15	E B 16	16	E B 15	E B 15	E B 16	G	G	C	U Y 40	E B 64	43	E B 44	42	43	42	36	28	29	24	23	E B 16	E B 16	35
26	28	E B 12	E B 16	E B 14	E B 16	E B 16	25	33	35	C	44	42	G	E B 44	G	G	40	28	31	E B 16	22	E B 16	E B 14	E B 15
27	E B 16	E B 14	E B 15	E B 14	E B 14	E B 16	22	G	36	48	42	E B 44	G 28	G 30	G 24	E B 18	G	23	E B 16	16	E B 16	E B 16	17	E B 15
28	E B 16	E B 15	E B 15	E B 16	E B 14	E B 16	22	29	G	G	G	E B 44	G	G 33	G	G	G	24	18	E B 14	E B 16	E B 16	E B 16	E B 15
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	U Y 21	29	U Y 34	G	G	E B 44	E B 44	G	G	G	G	24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 14
30	E B 16	E B 16	E B 16	E B 14	E B 16	E B 16	22	G	G	43	42	E B 41	G	E B 42	G	G 18	G	22	20	E B 15	E B 16	18	E B 16	E B 16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 15	E B 16	E B 16	23	30	36	38	E G 39	E G 42	G	G	G	G	32	26	20	16	E B 16	E B 16	E B 16	E B 16
U Q	16	16	16	16	16	16	24	33	38	42	43	44	42	E B 42	39	38	38	30	29	29	22	19	20	22
L Q	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	G	G	G	G	G	G	G	G	G	G	G	24	E B 18	E B 16	E B 15	E B 16	E B 16	E B 15

SEP. 2000 fbEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	12	14	16	14	13	16	16	15	16	17	18	45	24	30	23	17	16	15	12	15	16	14	15	15
2	17	15	15	15	16	16	13	14	14	16	21	25	24	30	21	15	16	16	16	14	15	15	15	16
3	12	14	13	15	12	11	14	14	16	20	18	20	18	19	20	14	16	16	14	16	15	14	16	12
4	15	15	15	14	12	15	15	16	16	19	30	23	23	23	26	24	15	15	15	12	16	14	15	16
5	16	16	16	16	16	14	16	18	15	19	23	23	20	52	20	23	15	15	13	15	14	16	16	15
6	13	16	16	16	15	12	16	14	20	23	29	46	22	29	21	19	14	16	16	14	16	16	15	15
7	16	16	16	14	15	16	15	18	19	26	30	27	25	51	16	15	17	13	18	13	16	16	16	12
8	14	12	15	14	14	12	15	17	18	21	47	28	26	28	20	18	18	16	15	15	14	15	14	16
9	14	12	15	13	15	16	16	16	16	20	20	43	46	23	20	19	16	16	16	16	11	16	17	23
10	16	15	13	16	16	12	15	16	21	21	21	28	29	21	24	16	16	16	16	15	15	15	15	16
11	15	15	14	14	16	14	15	16	14	14	23	21	22	22	19	18	14	14	16	14	15	14	15	16
12	14	15	16	13	16	15	15	16	16	22	23	20	20	31	20	15	16	15	14	16	14	16	16	15
13	16	16	15	16	16	16	13	16	16	14	24	23	19	23	20	14	14	14	16	14	15	15	16	14
14	16	12	14	16	15	16	16	14	16	22	24	27	29	28	20	18	15	15	16	14	16	15	15	14
15	15	15	16	15	16	16	14	15	19	20	22	26	23	17	16	37	13	12	16	16	16	16	16	15
16	14	16	18	15	15	15	15	14	24	27	23	24	26	34	63	18	14	14	16	13	14	14	16	14
17	16	16	16	16	13	15	14	16	18	20	48	26	25	42	44	24	16	16	16	16	15	16	12	13
18	16	14	13	14	16	14	15	14	18	18	26	24	26	22	24	21	19	16	16	14	15	16	16	14
19	16	14	15	15	15	16	14	16	18	28	16	44	27	22	19	20	18	16	15	13	16	16	14	16
20	14	16	14	16	14	16	16	14	25	23	28	32	32	27	22	18	16	14	16	16	14	14	15	19
21	14	16	16	16	14	16	16	20	18	20	25	46	34	44	24	24	18	14	15	17	14	14	16	15
22	14	16	14	16	16	16	15	14	19	23	22	22	24	28	26	24	16	16	14	16	13	16	16	15
23	15	16	16	13	15	16	16	15	13	46	48	43	30	20	22	18	17	14	14	15	12	15	16	16
24	15	16	15	14	16	15	16	17	22	20	23	18	46	50	22	16	15	14	15	12	14	16	16	15
25	15	16	15	15	15	16	16	15	C	20	64	20	44	19	18	20	17	14	16	14	15	16	16	15
26	16	12	16	14	16	16	12	15	15	C	22	17	24	44	16	22	16	16	14	16	12	16	14	15
27	16	14	15	14	14	16	13	18	14	22	21	44	15	23	16	18	16	14	16	14	16	16	15	15
28	16	15	15	16	14	16	16	23	22	22	22	44	23	26	23	20	16	15	14	14	16	16	16	15
29	16	16	16	16	16	16	16	16	17	28	30	44	44	25	21	17	15	16	16	16	16	16	16	14
30	16	16	16	14	16	16	14	15	24	22	27	41	25	42	22	16	16	16	15	15	16	15	16	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	15	15	15	15	15	16	15	16	18	21	23	26	25	28	21	18	16	15	16	15	15	16	16	15
U Q	16	16	16	16	16	16	16	16	20	23	29	43	29	34	23	21	16	16	16	16	16	16	16	16
L Q	14	14	15	14	14	15	14	14	16	20	22	23	23	22	20	16	15	14	14	14	14	15	15	14

SEP. 2000 fmin (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	R 283	275	285	R 283	261	266	309	301	303	307	298	295	R 291	R 289	R 295	298	299	300	R 303	290	306	279	R 271	265
2	277	R 279	R 286	283	276	268	305	314	R 314	296	310	287	284	296	285	294	302	308	293	287	281	R 282	R 271	R 293
3	247	R 263	273	254	248	266	300	R 316	311	296	289	301	304	297	298	301	298	302	308	300	296	287	R 296	R 279
4	R 293	R 291	274	274	265	272	321	322	333	315	302	R 299	294	293	296	304	314	308	305	295	R 281	R 284	R	290
5	R	R 273	R 286	R 294	273	269	U R 330	R 364	R 305	299	283	297	302	296	281	290	294	R 301	306	308	287	A	267	268
6	267	R 267	R 271	R 290	R 262	R 263	314	314	303	308	295	287	284	282	294	295	295	302	R 312	297	287	267	R 276	R 278
7	284	R 263	R 266	R 279	R 293	R 260	293	309	318	R 283	286	284	275	278	282	287	287	289	311	294	275	R 262	R 261	269
8	R 275	R 275	261	282	260	266	311	309	284	280	288	272	295	289	296	292	301	307	312	313	247	262	256	R 264
9	R 267	259	262	285	275	R 274	283	280	284	286	292	301	301	296	295	289	303	R 307	R 331	295	R 259	R 264	R 266	R
10	R 270	273	279	282	285	289	320	R 342	341	315	294	305	297	289	291	290	299	301	316	333	282	276	272	R 272
11	R 271	R 282	286	288	280	R 318	344	342	328	327	301	R 289	R 302	287	R 289	300	310	314	319	310	R 273	R 279	U R 285	282
12	R 279	R 279	R 291	276	264	267	318	347	R 329	R 317	307	303	305	290	288	290	301	297	322	314	R 264	265	267	266
13	275	246	263	302	R 271	265	291	321	301	303	303	287	282	294	298	302	R 312	R 318	R 335	R 344	262	Z 266	R 274	R 277
14	R 271	R 278	300	303	R 287	R 286	R 332	R 321	325	301	304	288	294	290	296	300	R 312	312	R 326	336	R 264	R 273	R 277	R 288
15	R 294	R 295	R 288	279	285	283	R 313	325	311	307	296	304	298	293	284	299	307	309	R 318	R 326	R 280	284	R 274	R 282
16	279	R 287	291	287	305	314	331	346	309	307	297	300	278	285	292	302	R 305	314	317	303	R 290	R 287	R 270	R 263
17	R 263	R 269	R 277	R 283	296	264	307	322	296	288	R 295	311	294	301	289	305	318	314	318	R 300	293	R 281	R 283	R 284
18	R 270	R 263	R 289	310	263	285	306	R 321	285	305	314	304	R 279	309	294	301	299	304	299	298	R 273	R 276	R 268	R 265
19	263	R	268	R 302	333	R 303	R 348	345	330	R 322	329	294	295	294	301	304	306	319	330	300	277	R 256	270	R 245
20	R 257	R 274	316	299	R 259	R 265	301	299	328	329	309	312	305	328	303	306	311	315	318	R 333	267	272	R 277	268
21	259	271	283	296	276	288	R 338	334	327	317	317	294	303	289	297	292	309	318	328	301	R 265	R 272	R 269	R 280
22	R 294	265	U R 288	301	294	290	337	333	334	308	310	301	293	285	296	304	R 302	310	331	329	R 263	R 279	268	R 271
23	278	R 286	R 285	R 317	279	291	336	R 331	325	322	318	301	294	287	284	293	306	322	326	R 329	R 269	R 269	276	284
24	R 291	R 293	282	285	263	282	R 336	346	346	330	314	299	290	292	293	296	307	R 308	R 314	R 311	R 273	280	289	286
25	287	R 283	268	271	272	R 309	343	333	C	319	303	R 287	276	284	R 289	286	291	307	308	303	292	288	270	286
26	R 272	267	255	258	259	259	R 311	316	307	C	R 278	R 282	283	288	302	319	315	314	315	302	R	R 276	R 259	261
27	266	257	244	259	267	274	R 305	301	302	312	297	294	295	286	296	308	306	313	307	288	288	301	R 290	R 286
28	271	270	270	284	R 282	270	R 319	331	299	304	305	296	287	289	278	289	296	308	R 311	284	R 277	R 293	275	R 264
29	R 263	264	R 263	R 271	266	287	320	311	R 316	311	298	303	287	281	291	294	304	309	R 313	310	R 283	283	273	R 276
30	R 281	R 283	261	273	267	293	324	337	331	309	299	293	280	281	279	286	287	304	290	314	272	R 279	R 251	248
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	29	29	29	29
MED	R 272	R 273	278	284	272	274	318	322	314	308	300	296	294	289	294	297	304	308	314	303	277	R 279	R 271	R 276
U Q	R 282	R 282	R 286	296	285	289	332	337	328	317	309	301	298	294	296	302	309	314	322	314	287	284	R 276	284
L Q	266	264	266	276	263	266	306	314	302	300	295	288	284	286	288	290	299	304	308	297	R 266	268	268	R 265

SEP. 2000 M(3000)F2 (0.01) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	L	L	L	L	U L 334	U L 371	L	L	L						
2							L	L	L	L	U L 354	L	L	L	L	L	L							
3						L	L	L	L	L	L	L	L	L	L	L	A	A						
4								L	L	L	L	L	L	L	L	L	L							
5									L	L	L	L	L	L	L	L	L	L						
6									A	L	L	U L 377	L	L	L	L	A	A						
7									L	L	L	U L 372	L	U L 342	U L 330	U L 354	L	L						
8								L	L	L	L	L	U L 355	L	U L 338	L	L	L	A					
9								L	L	L	L	L	L	L	L	L	L	L						
10							L	L	L	L	L	U L 347	L	L	U L 331	L	L	L						
11						L		L	L	L	L	L	L	L	L	L	A	L						
12							L			L	L	L	L	L	L	L	L							
13								A	A	L	L	L	L	L	L	L	A	A						
14							A	A	L	L	L	L	L	L	L	L	L	A						
15									A	L	L	A	U L 377	L	L	L								
16									L	L	L	L	L	L	B	L								
17									L	L	B	L	L	L	L	L	L							
18								L	L	L	L	L	U L 325	L	L	L	A							
19									L	L	L	L	L	L	L	L	L							
20							L	L	L	L	U L 373	L	L	L	L	A	L							
21									L	L	L	L	L	L	L	L	L							
22									L	L	L	L	L	L	L									
23									L	B	L	L	L	L	L	L	L							
24									L	L	L	L	L	L	L	L	A							
25									C	L	B	L	L	L	L	L								
26								L	L	C	L	L	L	L	L	L								
27									L	L	L	L	L	L	L	L								
28										L	L	L	L	L	L	L								
29									L	L	L	L	L	L	L	L								
30								L	L	L	L	L	L	L	L	L	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2	3	3	2	4	1								
MED											U L 364	U L 372	U L 355	U L 338	U L 334	U L 354								
U Q												U L 377	U L 377		U L 354									
L Q												U L 347	U L 325		U L 330									

SEP. 2000 M(3000)F1 (0.01) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								290	270	278	318	302	304	324	310	306	298	290						
2							282	260	250	278	294	280	316	300	308	308	300							
3						348	280	270	258	326	296	304	302	292	316	310	278	264						
4								252	250	274	288	296	316	322	332	306	268							
5									272	240	342	312	288	318	350	326	302	300						
6									246	284	302	304	330	338	314	308	258	276						
7									270	244	314	320	336	324	318	314	318	284						
8								256	272	310	318	300	326	348	330	330	284	274	270					
9								306	282	304	316	290	312	318	320	344	302	278						
10							274	240	252	274	310	294	326	348	324	330	284	272						
11						282		224	264	260	250	272	298	296	328	300	276	254						
12							268			244	282	296	290	290	320	306	272							
13								238	254	286	286	276	326	306	290	284	248	258						
14							240	242	266	286	276	308	290	314	308	296	270	268						
15									252	262	296	288	290	288	312	298								
16									296	276	304	288	296	326	288	276								
17									294	302	254	260	292	306	318	294	264							
18								268	334	268	232	286	358	284	288	302	258							
19									270	240	256	318	312	290	282	286	282							
20							322	314	280	286	276	310	286	278	312	278	282							
21									256	268	260	304	298	304	292	284	266							
22									256	266	270	278	284	300	286									
23									268	252	270	282	300	294	288	290	284							
24									240	256	258	308	314	304	292	302	264							
25									C	260	292	322	340	302	298	304								
26								260	298	C	292	332	310	288	298	270								
27									284	274	300	292	306	284	308	282								
28										282	276	276	302	298	306	292								
29									240	268	274	262	320	326	310	302								
30								256	240	270	304	292	312	312	318	300	308							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	6	14	27	29	30	30	30	30	30	29	22	11	1					
MED						315	277	258	266	274	290	295	308	304	310	302	280	274	270					
U Q							282	270	280	285	304	308	320	322	318	308	298	284						
L Q							268	242	252	260	270	282	296	292	292	288	266	264						

SEP. 2000 h'F2 (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	272	274	266	256	EA 316	R 334	240	228	220	228	198	248	222	212	234	246	240	A	266	272	240	236	EA 290	EA 302
2	290	280	266	256	280	EB 306	244	226	218	216	210	214	230	236	228	232	228	248	264	256	254	EA 304	EA 292	254
3	EA 310	304	290	EA 326	352	EA 324	246	EA 232	224	EA 234	202	EA 282	A	218	226	EA 248	A	A	256	290	260	264	254	EA 254
4	EA 288	EA 344	EA 310	EA 308	EA 334	EA 330	242	232	EA 236	214	216	208	210	216	212	R 246	236	240	252	252	256	264	EA 298	EA 272
5	EA 306	EA 342	EA 302	260	254	314	238	218	H 206	A	EA 268	236	EA 254	R 260	H 214	H 222	EA 258	232	254	240	EA 256	A	EA 296	EA 306
6	EA 290	310	290	258	270	EA 300	226	230	A	208	230	212	EA 282	232	230	242	A	A	254	244	EA 254	250	EA 296	EA 296
7	EA 276	306	298	268	268	EA 318	250	234	212	210	216	210	226	U R 278	EA 230	226	236	254	250	222	236	286	310	286
8	280	272	308	270	280	296	242	228	220	230	EB 254	EA 254	222	248	232	232	A	EA 262	A	EA 286	EA 372	EA 286	EA 342	EA 326
9	314	EA 310	302	260	254	304	254	228	222	244	U R 278	228	226	222	226	236	244	EA 266	244	228	EA 282	EA 326	298	EB 312
10	298	288	280	262	266	EA 264	250	EA 226	212	232	204	208	220	218	228	240	EA 244	244	250	222	212	246	288	316
11	302	274	272	280	282	242	236	A	212	210	200	198	228	236	232	228	A	A	238	236	246	EA 272	272	272
12	282	274	246	282	314	EA 322	242	222	212	192	212	210	220	232	222	232	EA 246	230	242	218	240	302	306	296
13	272	334	304	248	244	278	248	A	A	222	216	EA 214	222	234	EB 256	EA 248	A	A	240	240	EA 332	EA 334	EA 324	EA 302
14	EA 318	EA 288	EA 260	246	234	EA 278	A	A	228	228	210	224	226	218	234	230	EA 250	A	238	EA 258	EA 336	EA 300	EA 292	254
15	260	250	278	278	278	EA 300	234	234	A	226	228	A	204	222	206	234	236	244	250	238	226	266	EA 322	EA 292
16	270	282	274	EA 286	234	220	238	228	244	212	234	236	238	234	B	230	240	248	240	244	240	254	284	318
17	302	304	284	244	228	302	244	236	230	EA 270	B	210	222	226	244	236	242	254	226	240	240	268	276	266
18	312	320	280	246	272	266	234	238	248	232	208	212	242	226	U R 256	242	A	250	242	240	262	270	298	306
19	296	312	300	244	210	242	228	228	218	212	200	236	224	230	224	212	244	248	222	228	282	EA 336	EA 314	344
20	328	290	236	252	308	352	EA 278	246	244	234	222	206	228	240	EA 268	A	226	238	238	224	EA 308	284	288	322
21	324	308	282	250	244	278	234	232	228	216	214	216	ER 254	238	252	ER 242	244	246	222	EA 244	244	298	296	282
22	258	318	280	250	242	260	234	234	222	224	224	220	232	222	218	242	240	250	232	220	246	292	306	290
23	292	282	264	236	214	266	232	230	228	B	EB 250	220	210	228	222	230	248	242	226	216	242	300	296	274
24	276	270	256	272	322	292	236	236	EA 232	220	210	218	240	EB 258	240	EA 252	A	252	242	248	EA 276	276	266	270
25	266	280	302	308	294	262	214	242	C	212	B	214	240	238	EA 246	246	246	252	250	246	256	238	276	EA 302
26	EA 304	306	322	326	306	316	238	EA 248	240	C	238	220	220	232	236	236	250	256	248	230	EA 292	274	294	296
27	284	320	318	296	246	280	244	242	226	EA 258	228	200	224	218	238	232	248	248	234	240	258	246	262	260
28	278	284	298	268	258	276	242	238	220	226	214	232	204	224	234	234	242	236	226	256	290	268	274	282
29	294	300	314	268	284	270	228	230	A	230	224	230	232	224	242	248	248	244	228	228	248	238	272	286
30	280	276	306	308	294	256	218	218	220	220	H 208	H 196	226	238	234	244	244	250	256	222	248	282	340	334
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	29	27	25	27	28	29	29	30	29	29	23	24	29	30	30	29	30	30
MED	286	290	284	262	269	276	238	231	221	222	214	215	225	230	231	234	243	248	242	238	248	269	288	U 284
U Q	304	310	302	282	294	314	244	236	231	232	229	231	235	238	241	245	248	252	251	248	EA 282	EA 299	306	306
L Q	276	280	272	250	244	266	234	228	218	212	209	210	221	222	225	231	240	243	233	228	242	259	276	272

SEP. 2000 h'F (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	114	114	114	114	116	B	112	112	116	112	114	110	108					
2						B	122	112	108	110	110	122	118	122	114	114	114	114	B					
3						B	122	110	120	122	108	116	112	110	112	122	120	120	B					
4						B	120	116	114	114	112	114	116	A	A	A	124	110	B					
5						B	128	120	112	112	108	110	110	B	112	112	110	110	B					
6						B	120	114	114	114	114	B	A	114	A	108	112	120	B					
7						B	122	120	124	A	116	A	112	B	112	114	116	114	B					
8						B	A	120	A	A	B	114	114	A	120	110	124	E A 126	B					
9						B	118	A	114	112	110	B	B	114	110	110	116	118	B					
10						B	120	112	114	114	120	114	114	116	116	A	118	126	B					
11						B	114	112	114	114	116	118	116	112	112	114	112	118	B					
12						B	116	A	A	116	A	118	122	116	110	112	108	112	B					
13							122	112	116	116	112	114	114	114	112	118	116	116	B					
14						B	B	116	A	A	114	112	116	A	118	114	116	114	B					
15						B	B	116	110	A	A	A	118	A	120	B	120	120	B					
16							122	120	110	A	A	A	A	124	B	116	A	B						
17						B	B	118	114	120	B	108	A	B	B	116	116	120	B					
18							118	116	110	114	122	116	116	120	118	118	116	120	B					
19						B	B	108	122	120	114	B	116	112	118	118	116	B	B					
20							B	118	120	120	116	122	122	116	114	116	128	128	B					
21							126	122	120	116	118	B	126	B	112	120	122	128						
22							144	130	116	118	116	A	A	116	116	116	118	116						
23							132	118	116	B	B	B	116	122	114	116	116	128						
24							128	118	114	114	104	116	B	B	116	114	A	A						
25							144	114	C	110	B	A	B	116	120	120	118	130						
26							120	122	110	C	114	108	112	B	110	122	124	124						
27							B	118	112	114	116	B	A	118	116	114	118	126						
28							B	130	120	114	114	B	112	120	116	118	116	B						
29							B	122	120	122	118	B	B	116	116	118	116	B						
30							140	116	118	116	118	B	118	B	116	120	118	126						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							21	28	26	23	23	15	21	19	26	27	28	25	1					
MED							122	117	114	114	114	114	116	116	116	116	116	120	108					
U Q							128	120	120	118	116	118	118	120	116	118	119	126						
L Q							119	114	112	114	112	112	112	114	112	114	116	114						

SEP. 2000 h'E (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2000 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	96	B	B	104	106	98	G	122	122	122	118	B	G	G	B	G	G	158	120	102	140	102	98	106
2	B	100	B	B	B	B	132	116	126	112	G	102	104	G	G	G	140	124	118	110	110	106	106	108
3	106	108	134	130	104	102	132	130	122	118	G	118	116	132	G	150	124	124	114	114	110	108	104	102
4	102	100	100	106	98	98	130	118	118	120	116	118	G	108	106	102	106	120	108	108	106	108	106	100
5	96	96	94	92	92	96	146	G	124	114	112	110	112	B	G	120	118	118	104	104	100	112	100	98
6	96	B	B	B	B	102	118	124	112	116	110	B	102	114	108	G	126	120	114	104	100	98	94	92
7	96	B	B	B	108	106	G	104	106	106	G	104	G	B	100	98	G	126	96	98	B	B	106	102
8	104	102	102	104	106	108	108	106	108	108	B	110	G	104	104	128	124	116	110	112	110	114	94	106
9	B	102	102	106	B	108	126	104	102	G	G	B	B	G	G	G	140	120	98	94	96	94	B	B
10	B	B	B	B	122	108	126	116	116	116	110	G	G	G	116	106	134	122	116	B	B	B	B	B
11	B	B	B	B	124	136	118	114	G	126	G	G	G	G	G	142	120	116	116	108	B	102	B	B
12	B	B	130	B	B	134	124	108	108	102	106	102	104	G	G	130	122	118	112	B	108	B	B	B
13	100	B	132	132	130	122	120	114	114	122	G	120	112	G	G	128	118	112	108	106	104	104	102	102
14	100	100	98	100	112	110	108	114	108	108	108	G	G	108	104	102	122	108	102	100	102	98	100	B
15	100	104	100	B	104	124	112	110	108	106	106	104	104	98	98	B	98	134	96	102	98	108	106	110
16	B	96	B	106	B	126	138	118	112	104	104	102	104	G	B	102	102	96	96	102	96	96	96	B
17	B	98	B	120	118	126	126	114	114	112	B	G	104	B	B	G	142	126	112	B	B	B	94	B
18	B	B	B	136	B	B	G	G	G	G	G	G	G	G	G	136	120	116	114	B	110	B	110	102
19	102	B	B	B	B	B	120	G	126	G	96	B	G	G	134	G	120	114	108	106	114	106	108	B
20	106	108	132	126	116	122	136	118	G	G	120	G	G	G	114	110	108	108	106	106	102	106	B	B
21	98	B	B	B	B	B	G	G	126	G	G	B	G	B	126	G	G	134	124	114	B	B	B	B
22	B	98	98	B	B	108	146	162	104	100	106	102	100	G	G	G	G	146	B	B	B	B	B	B
23	B	B	B	B	B	120	G	160	G	B	B	B	G	104	G	G	148	130	116	112	B	B	B	B
24	B	B	B	B	B	B	136	148	136	128	126	100	B	B	108	154	106	100	122	118	116	B	B	B
25	B	B	110	116	B	B	G	G	C	142	B	134	B	134	148	142	138	130	114	112	108	B	100	108
26	104	104	B	B	B	B	134	130	124	C	118	126	G	B	G	G	130	120	114	118	110	B	B	106
27	B	B	B	B	B	B	126	G	126	128	120	B	96	104	100	B	G	132	120	134	B	110	102	102
28	106	B	B	B	B	B	132	128	G	G	G	B	G	106	G	G	G	102	106	B	B	110	B	B
29	B	B	B	B	B	96	142	130	124	G	G	B	B	G	G	G	G	122	B	B	110	B	B	B
30	B	B	B	B	B	B	168	G	G	130	120	B	G	B	G	102	G	118	104	B	B	106	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	13	12	13	13	20	24	23	23	21	16	14	11	10	13	16	22	30	28	22	20	18	17	14
MED	100	100	102	106	108	108	128	118	116	116	111	107	104	107	108	124	122	120	112	107	108	106	102	102
U Q	104	104	131	128	120	123	136	130	124	124	119	118	112	114	121	139	134	126	116	112	110	108	106	106
L Q	96	98	99	104	104	102	120	114	108	107	106	102	102	104	102	102	118	116	105	102	101	102	97	102

IONOSPHERIC DATA STATION Kokubunji

SEP.2000 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

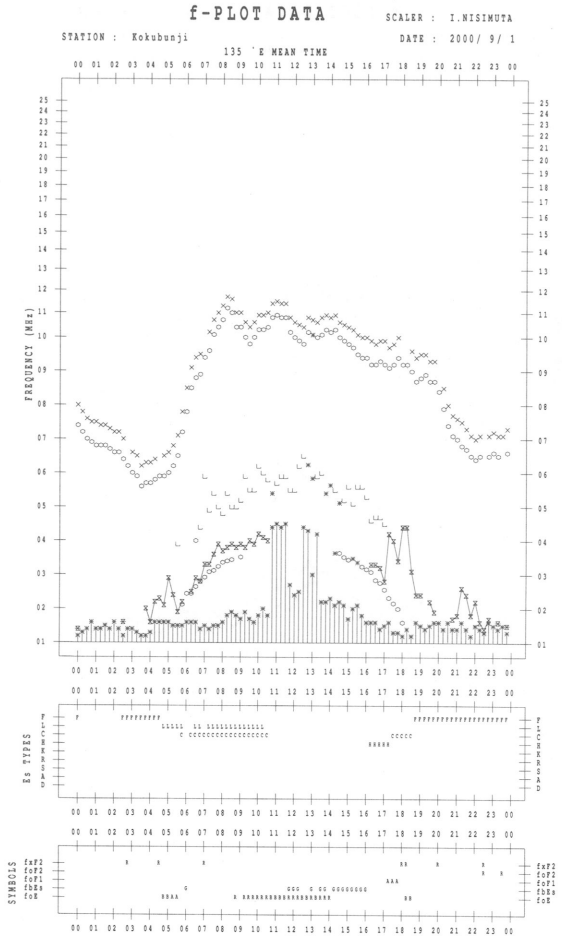
LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

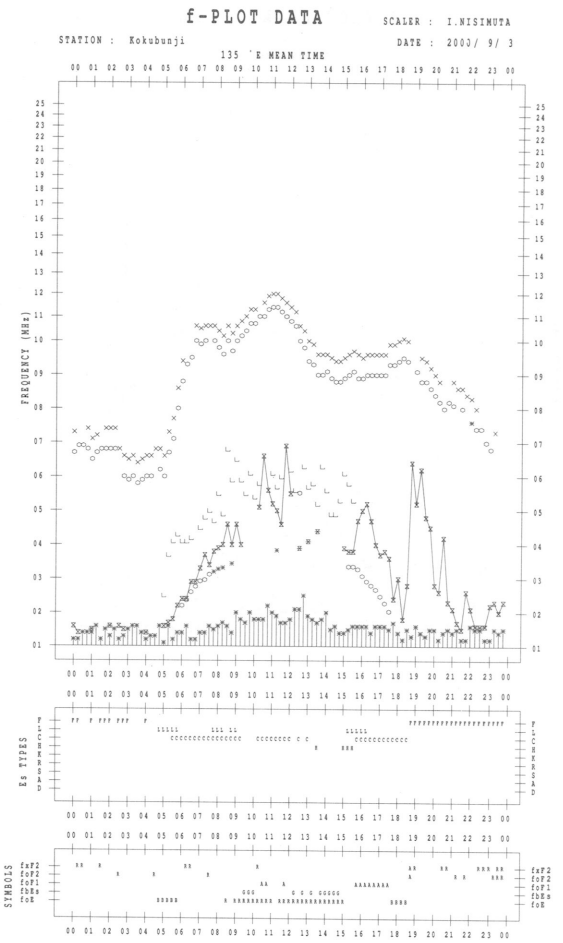
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F2			F1	F2	L5		C2	CL11	CL11	CL11							H1	C3	F5	FF21	F2	F4	F1
2		F1					H1	C1	C1	C1		L1	L1				H1	C2	C3	F3	F2	F4	F2	F1
3	F1	F1	F1	F1	F1	L3	C2	C2	CL11	CL21		C2	C2	C1		H1	CL21	C2	C5	F5	F5	F3	F2	F2
4	F4	F3	F3	F1	F2	L3	CL11	C2	C1	C1	C1	C1		L1	L1	L1	L1	C1	C2	F1	F5	F3	FF32	F6
5	F4	F4	F4	F2	F2	L1	HL11		C1	C1	C1	C1	C1			C1	C2	C1	C2	F2	F4	FF23	F2	F2
6	F2					L1	C2	C1	C2	C1	C1		L1	C1	L1		C2	C2	C3	F1	F2	F2	F2	F3
7	F2				F3	L3		L1	L1	L1		L1			L1	L1		CL11	C2	F1			F1	F1
8	F1	F1	F2	F1	F1	L2	L2	L1	L1	L2		C1		L1	L1	C1	CL21	CL22	C3	F3	F3	FF11	F1	F1
9		F2	F2	F1		C1	C1	L2	L1								HL11	CL32	L2	F3	F2	F2		
10					F1	L1	C1	C2	C1	C1	L1				C1	L1	CL11	CL13	C2					
11					F1	C1	C1	C2		CL11						H1	C2	C3	C3	F6		F2		
12			F1			C1	C1	LC12	L1	L1	L1	L1	L1			C1	C2	C2	C3		F1			
13	F1		F1	F1	F1	F2	C1	C2	C2	C1		C1	C1			CL11	C3	C3	C4	FF21	F3	F3	F3	F2
14	F4	F2	F2	F1	F2	L6	L3	C2	L1	L1	C1			L1	L1	L1	CL11	C4	L5	F6	F3	F3	F2	
15	F1	F1	F1		F2	C1	C2	C2	C2	L1	L1	L2	L1	L1	L1		L2	CL11	L2	F2	F1	F2	F2	F1
16		F1		F2		FF11	CL11	CL11	C1	L1	L1	L1	L1			L1	L2	L3	F4	F2	F3	F2	F1	
17		F1		F1	F1	C1	C1	C2	CL11	CL11			L1				H1	C2	C2				F1	
18				F1												H1	C2	C3	C2		F1		F1	F1
19	F1						C1		C1		L1				CL11		C2	C2	C2	F2	F1	F3	F3	
20	F1	F2	F1	F1	F2	F1	C2	C2			C1				C2	C2	L1	L1	LC41	F4	F4	F2		
21	F1								C1						C1			H1	F2	F3				
22		F2	F1			F1	H2	HL12	L1	L2	L1	L1	L1					H1						
23						F2		H1						L1			H1	H1	F3	F2				
24							H2	H1	C1	C1	C1	L1			L1	H1	L3	L4	FF25	FF26	F5			
25			F1	F1						H1		CL11		CL11	H1	H1	H1	C3	F5	F3	F4		F1	F4
26	F6	F1					C2	C2	C1		C2	C1					C1	C2	C5	F2	F4			F2
27							C1		C1	C2	C1		L2	L1	L1			C2	F2	FF11		F1	F3	F2
28	F1						C1	C1						L1				L2	F1			F1		
29						F1	HL11	CL11	C1									C2			F2			
30							H2			C1	C1					L1		C2	F4			F1		
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

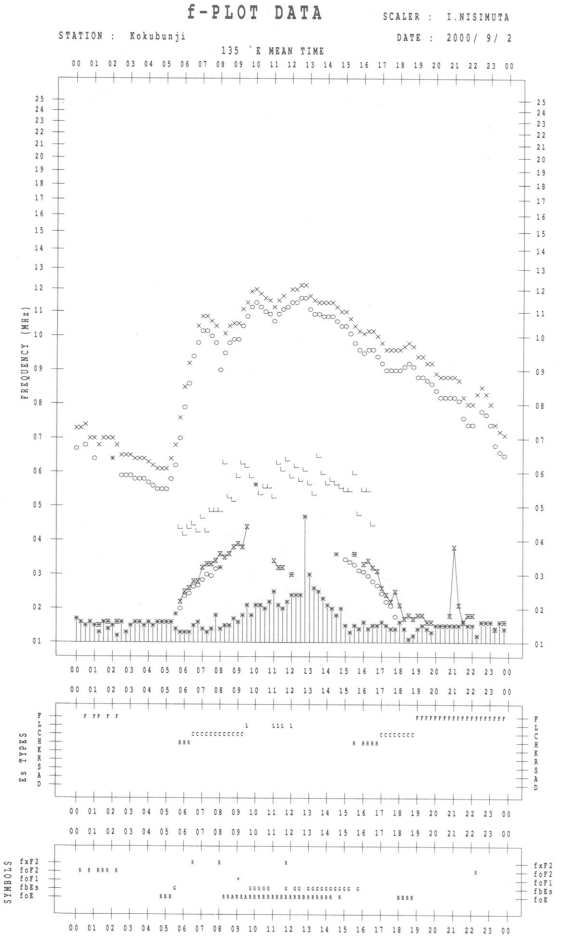
SEP.2000 TYPES OF Es COMMUNICATIONS RESEARCH LABORATORY, JAPAN

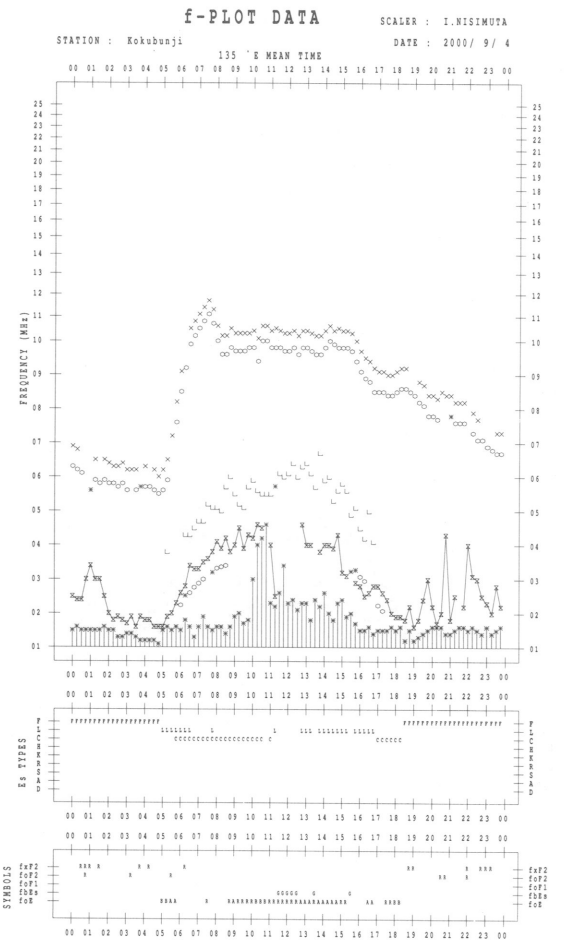
f-PLOTS OF IONOSPHERIC DATA

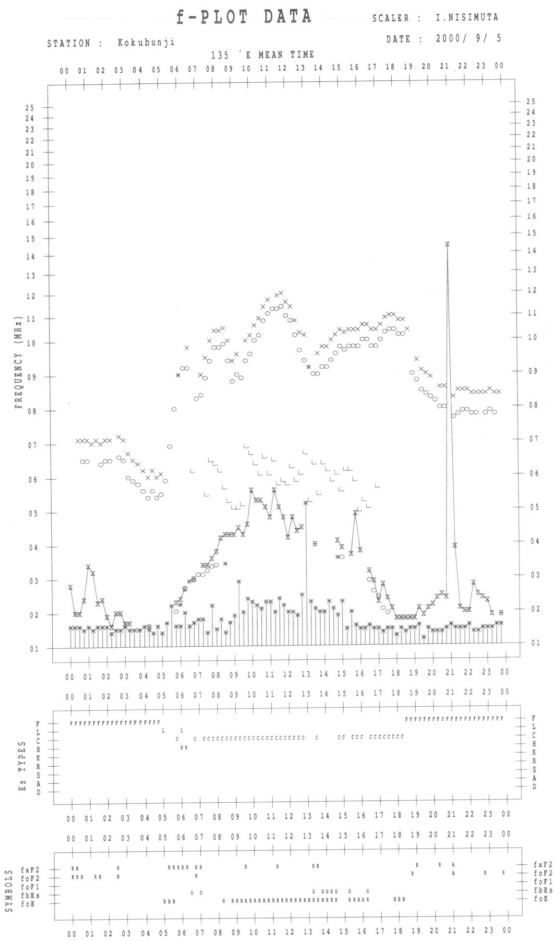
KEY OF f-PLOT	
	SPREAD
	foF2, foF1, foE
	fxF2
	DOUBTFUL foF2, foF1, foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

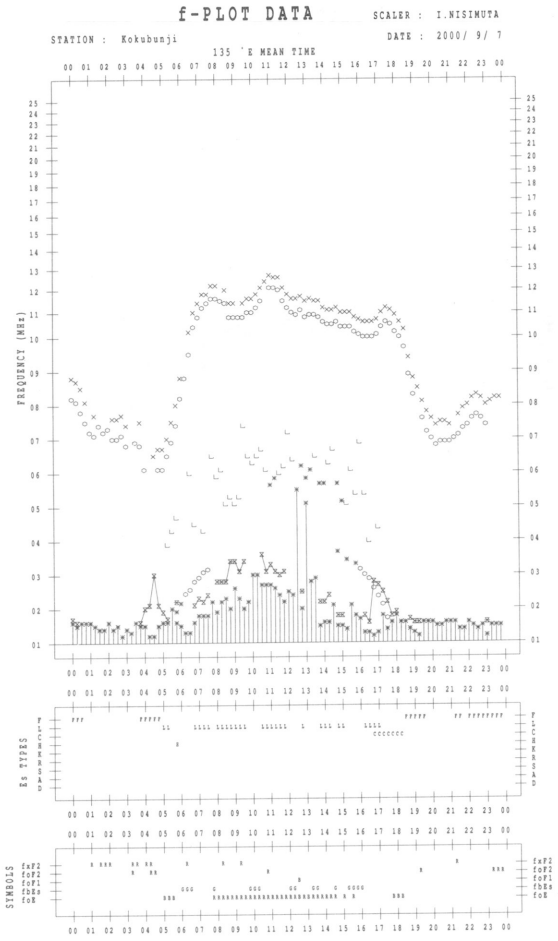

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

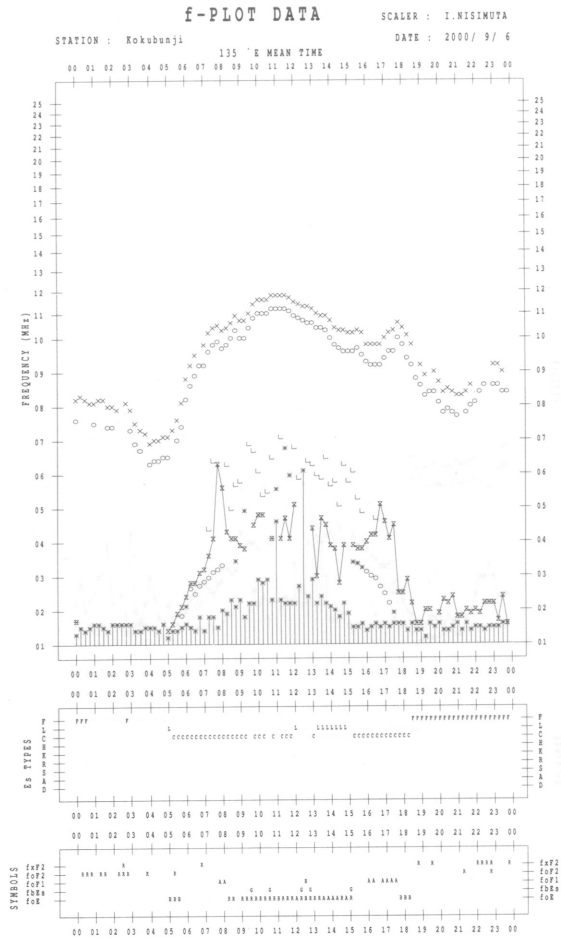

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 3
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

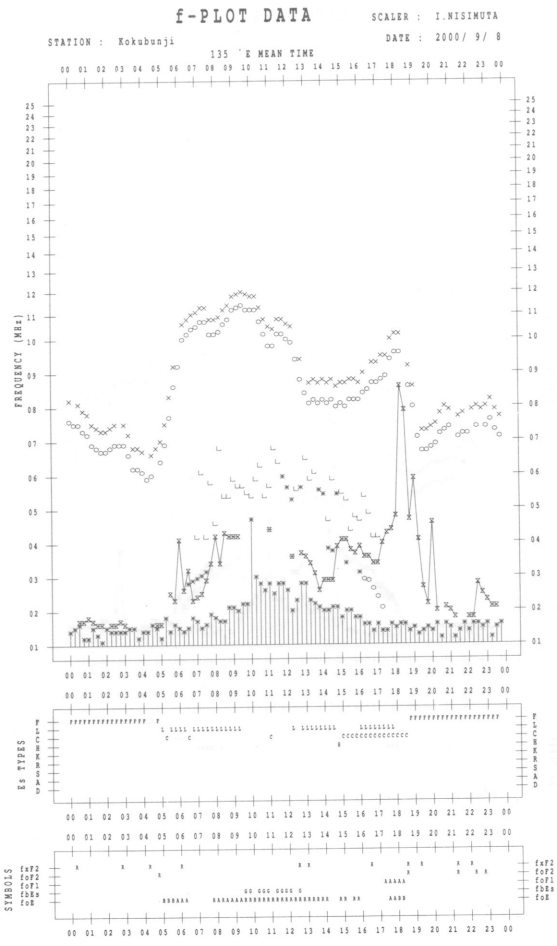

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 2
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

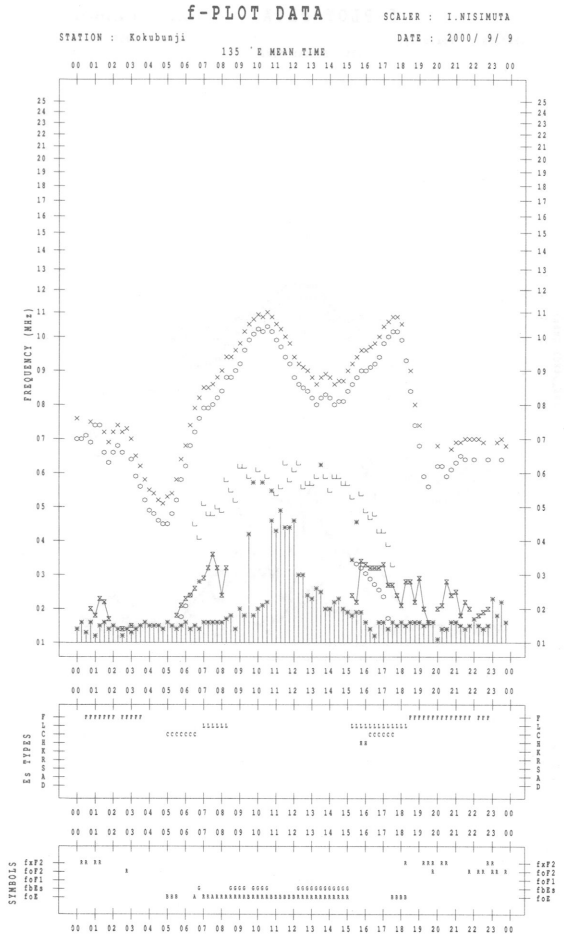

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 4
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

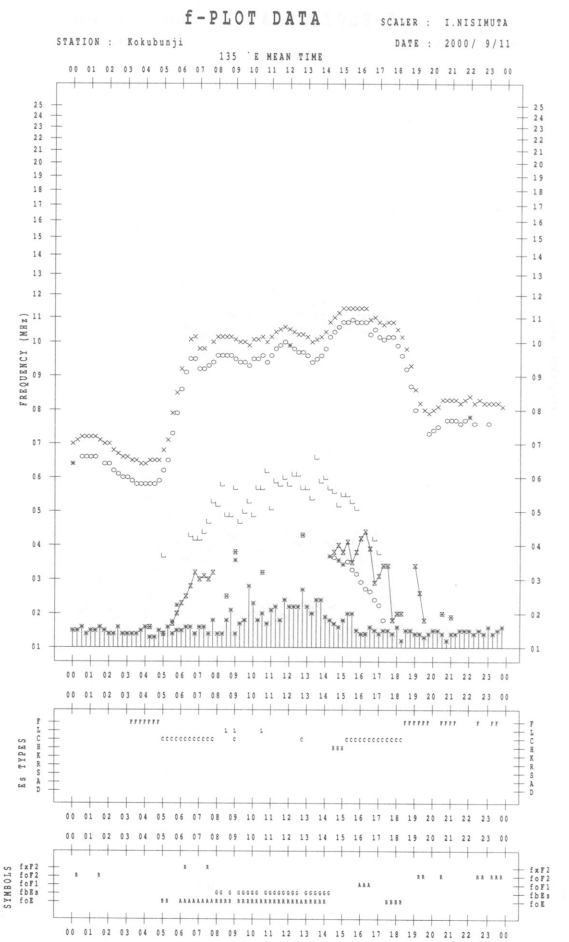

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 5
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

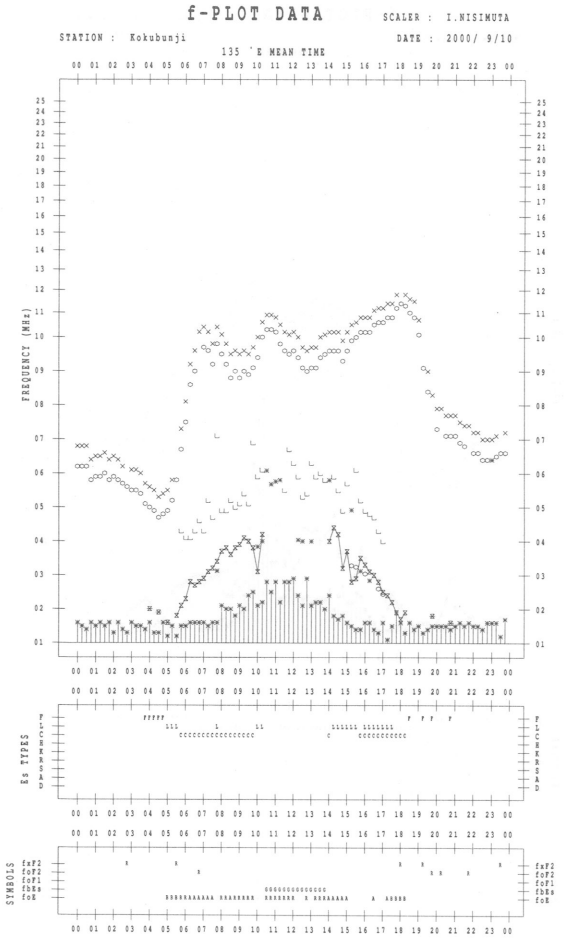

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 7
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

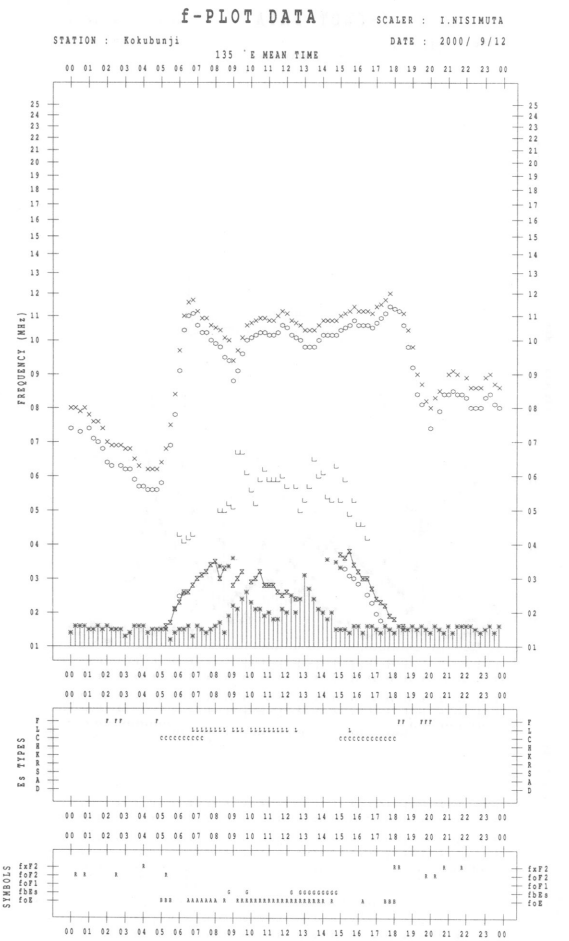

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

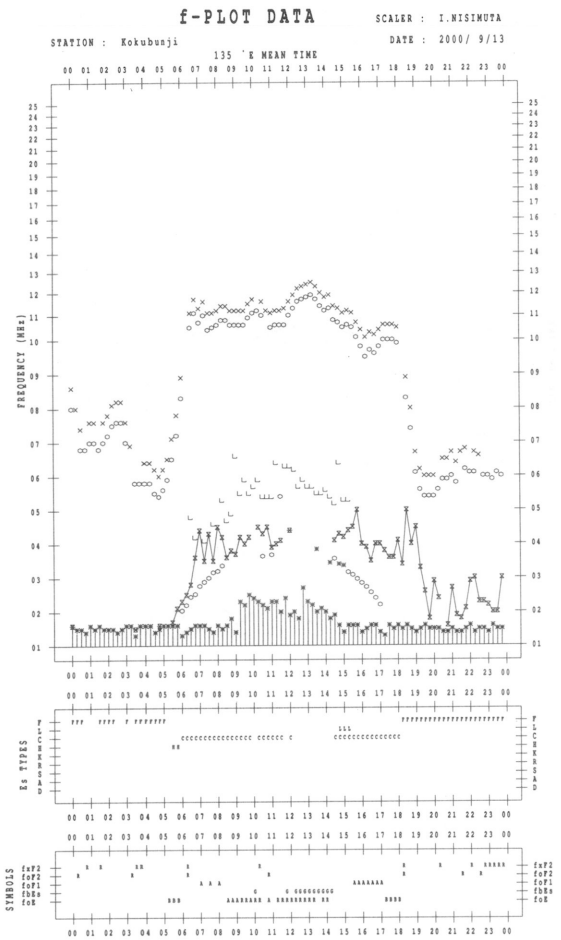

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 8
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

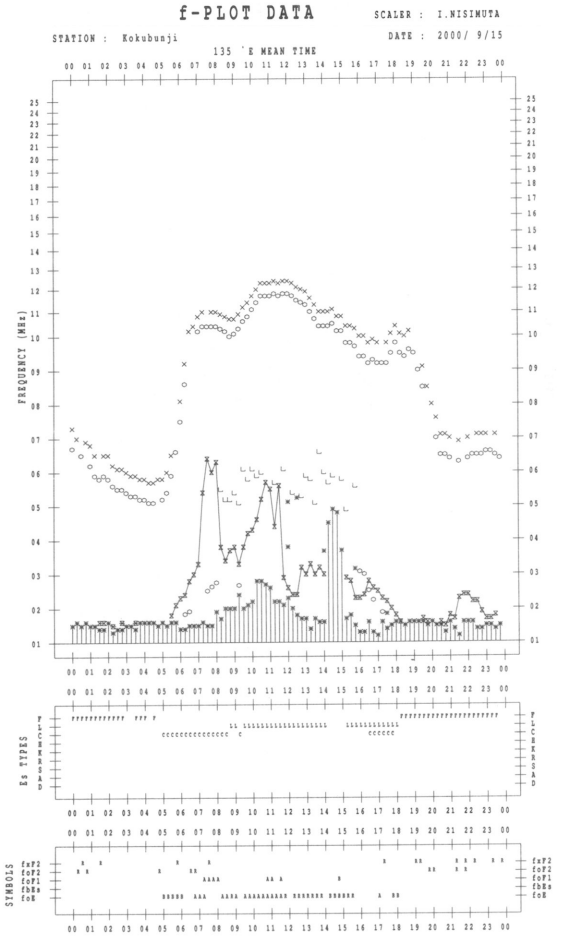

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/ 9
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

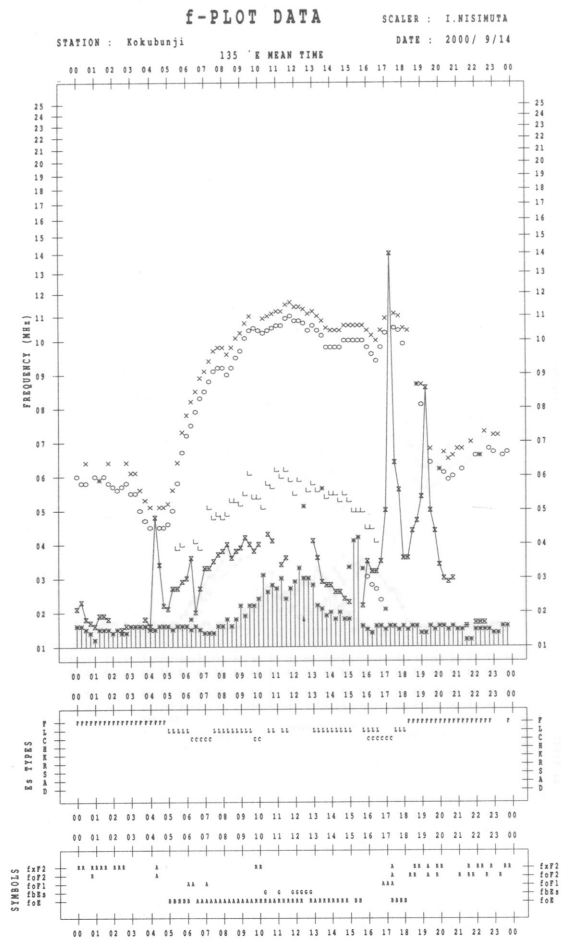

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/11
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

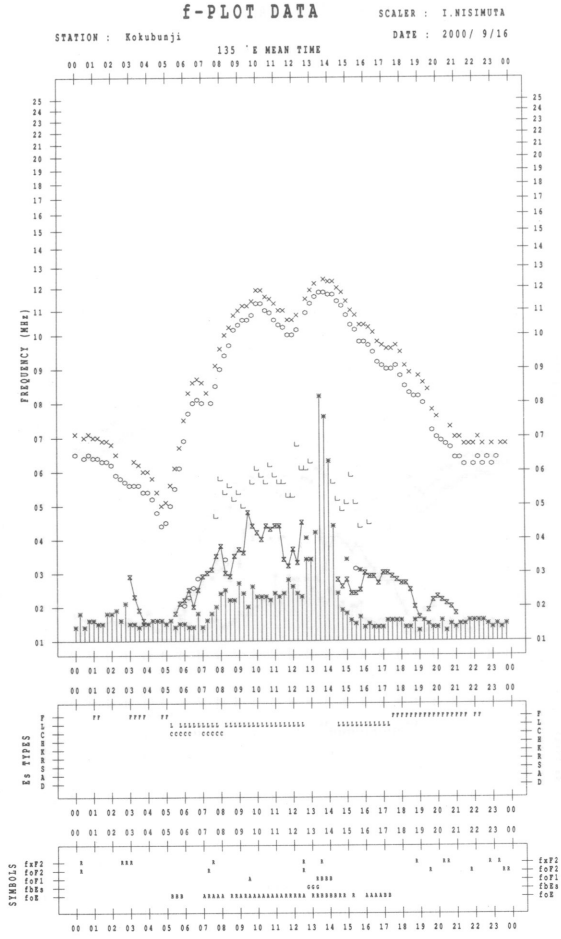

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/10
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

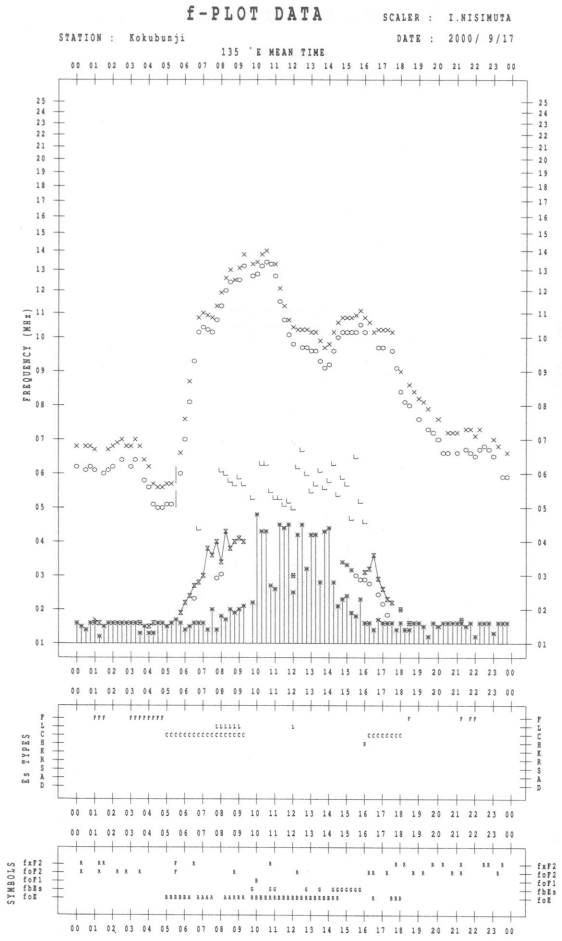

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

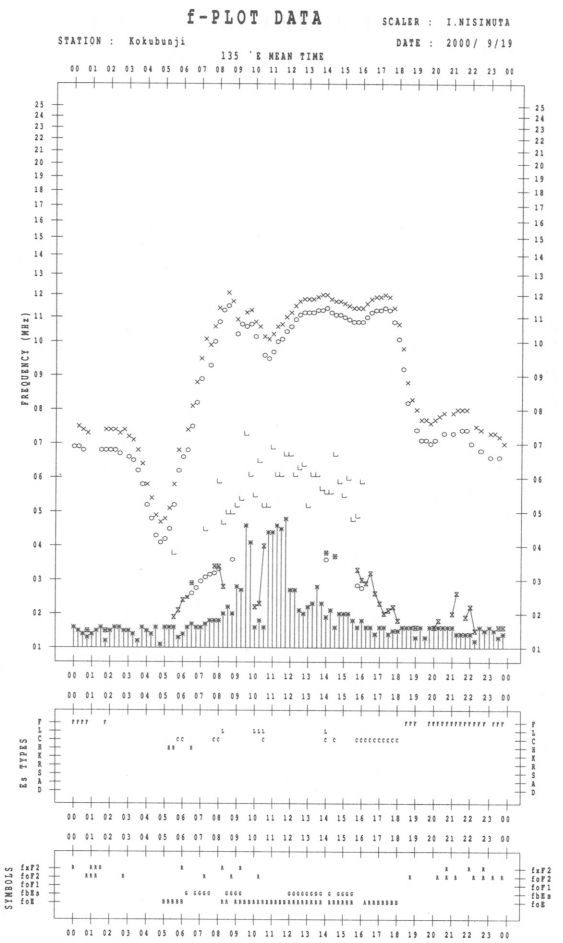

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

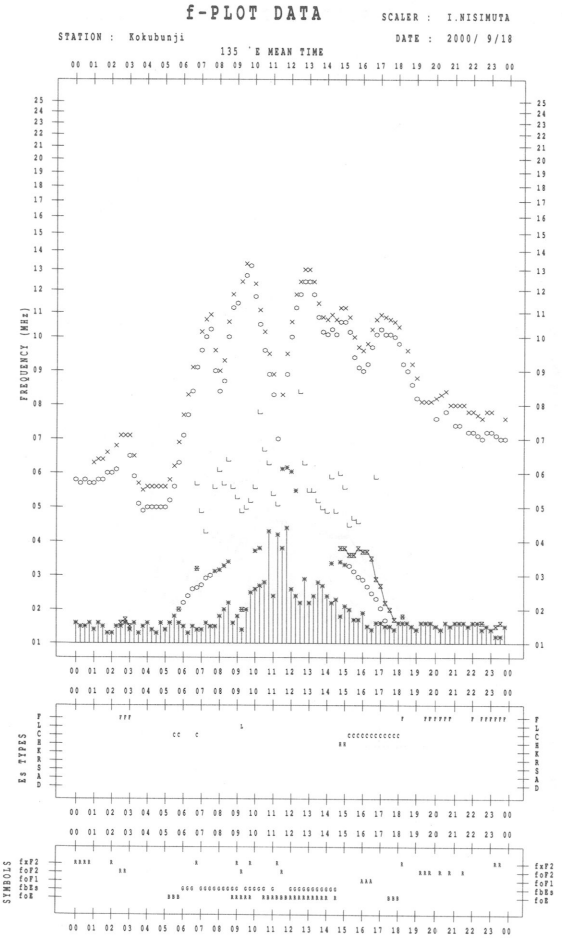

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

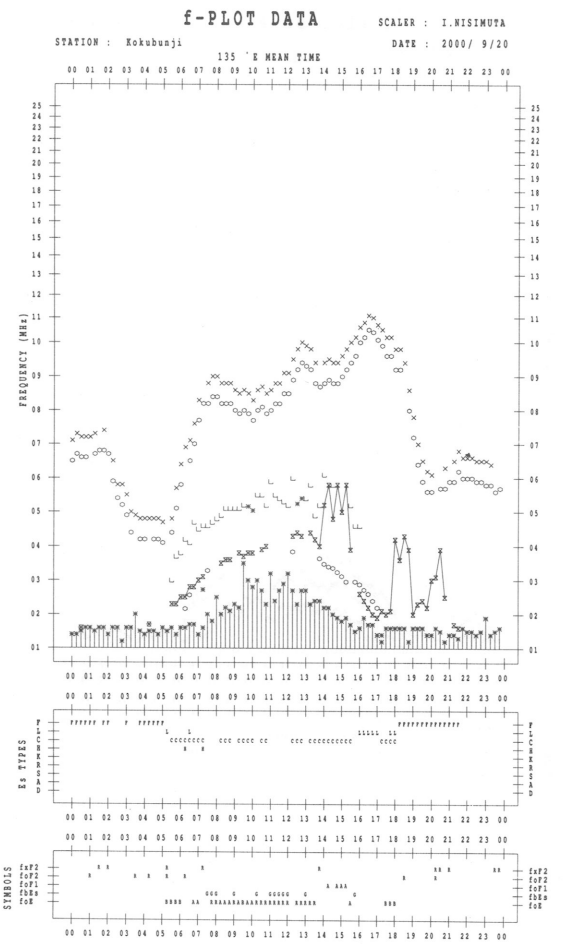

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

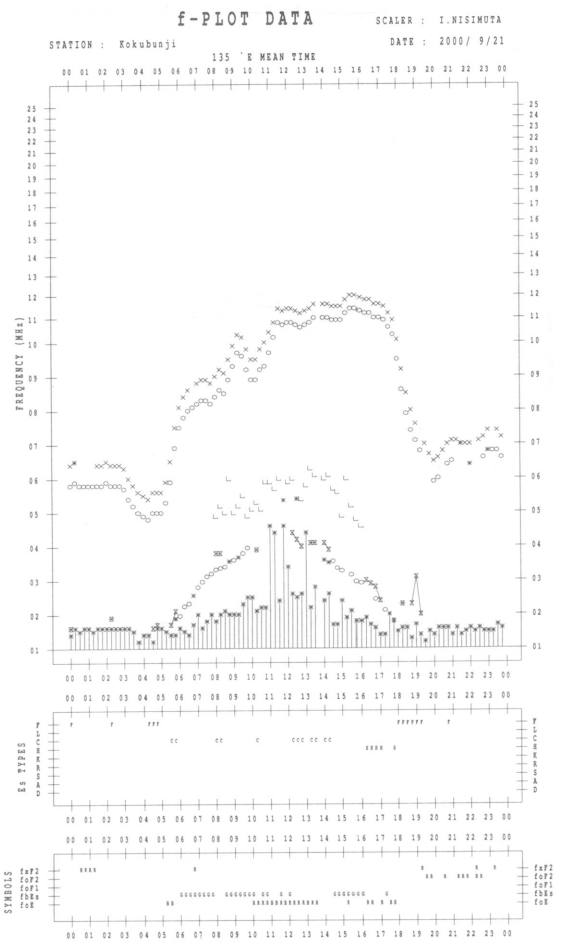

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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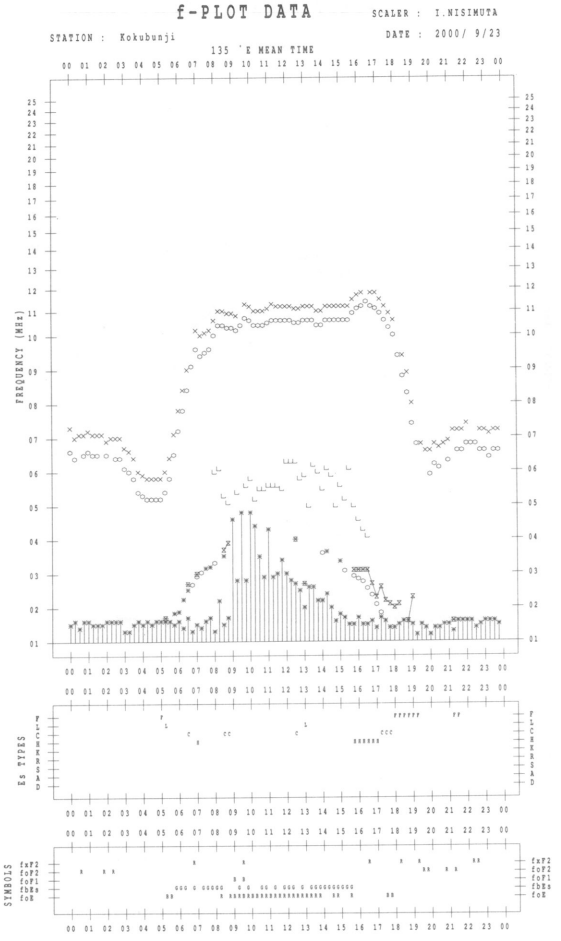
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/21
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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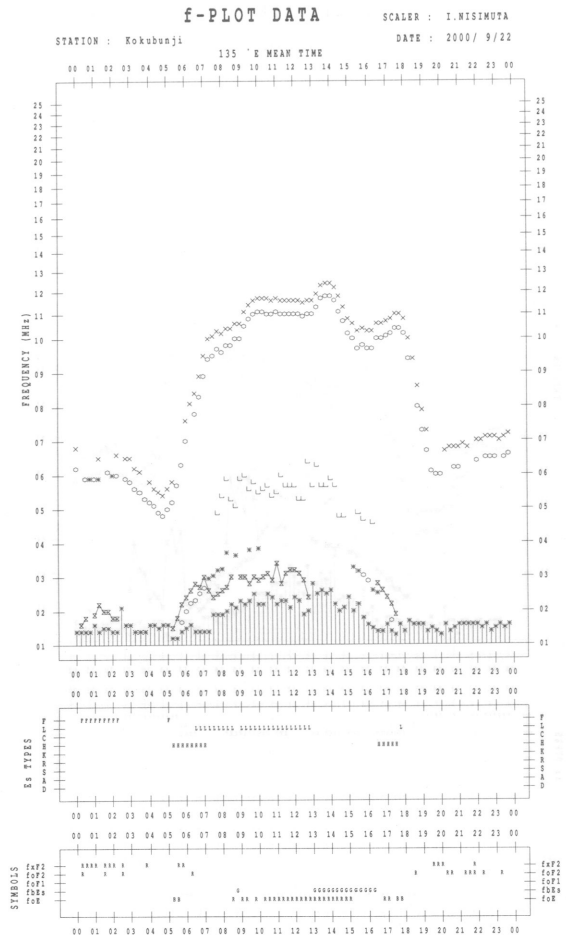
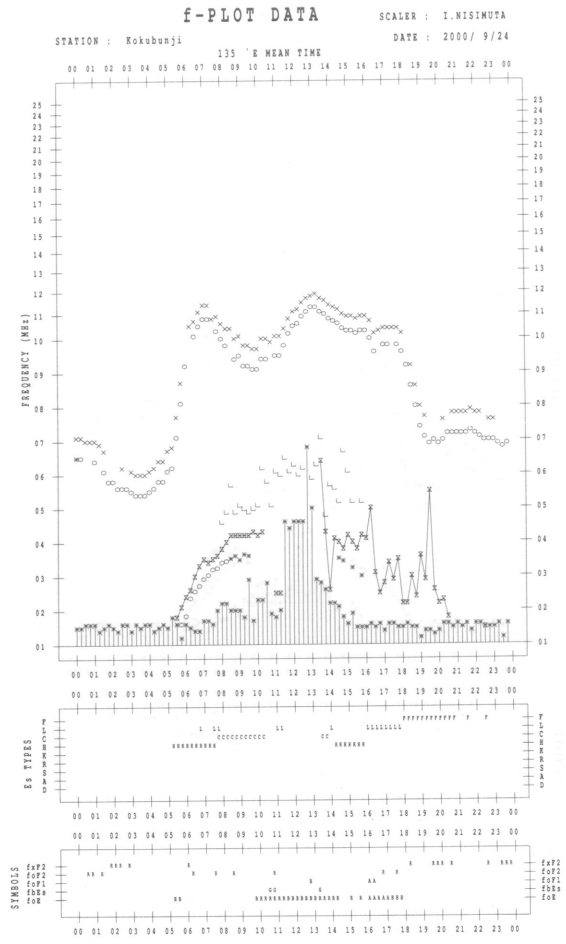
STATION : Kokubunji
DATE : 2000/ 9/23
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/22
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
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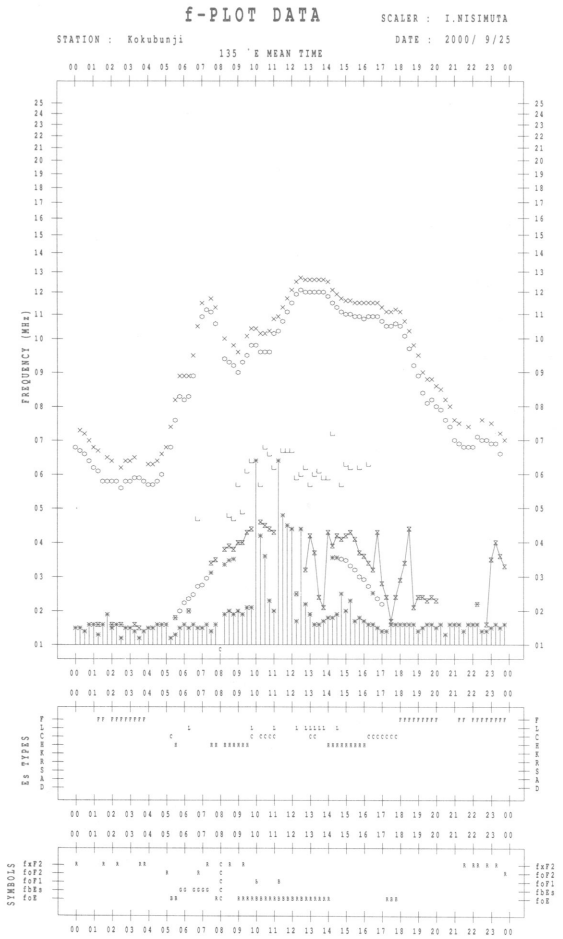
STATION : Kokubunji
DATE : 2000/ 9/24
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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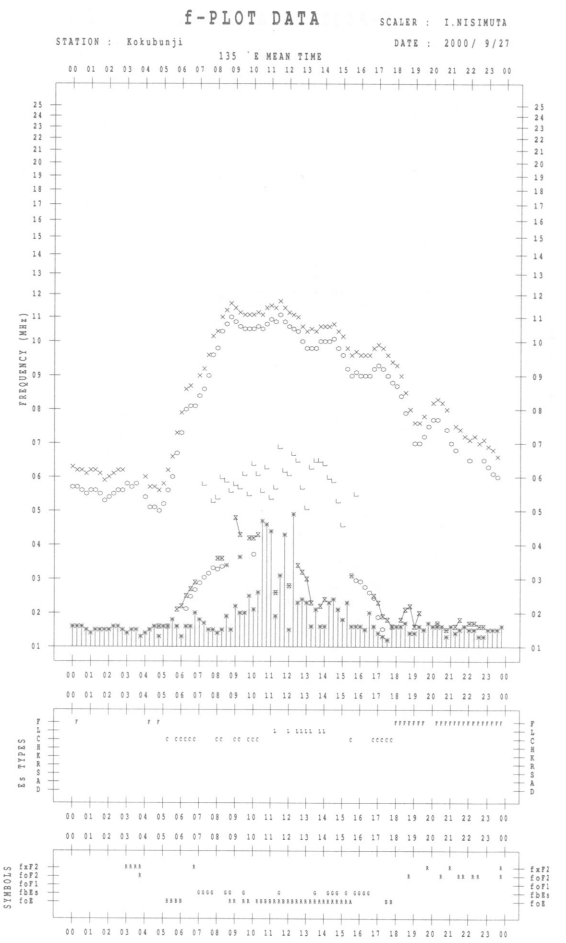
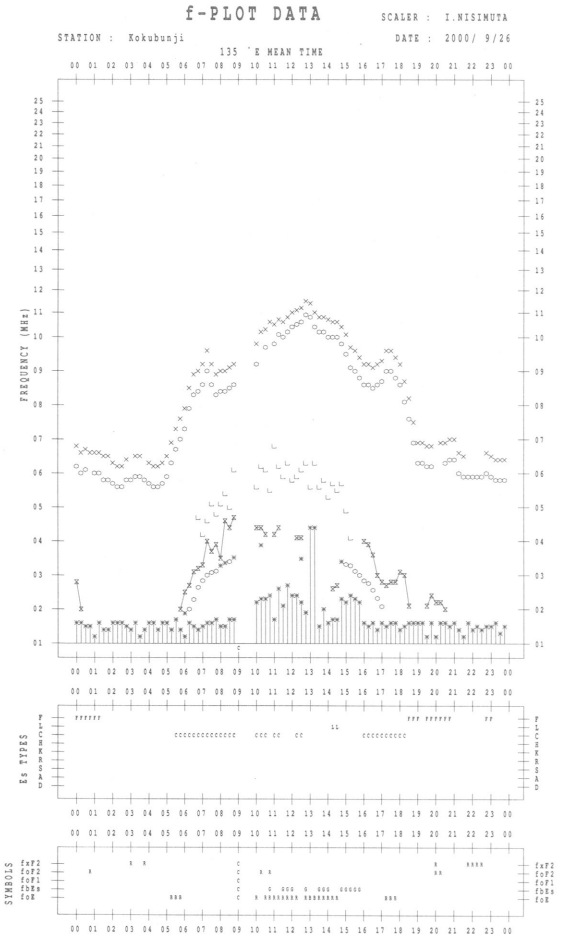
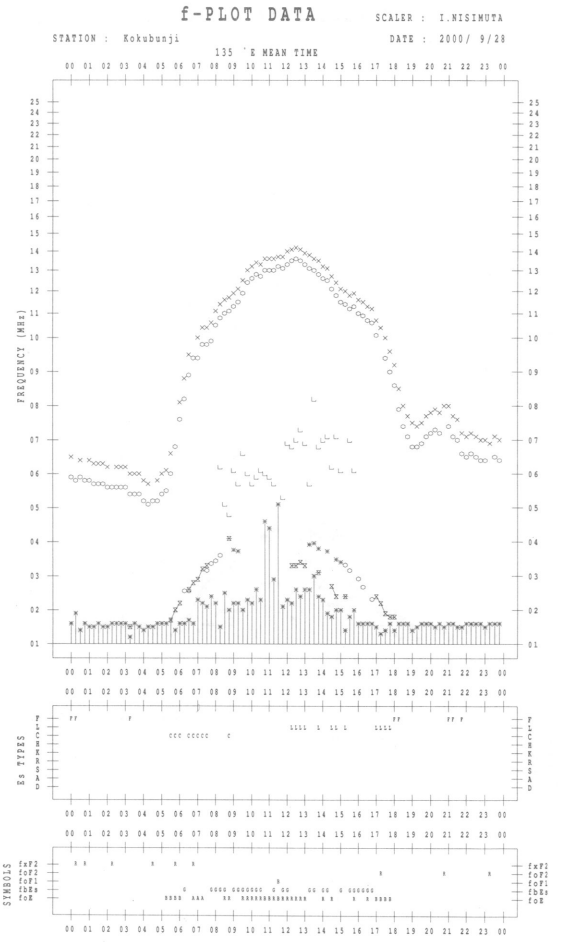
STATION : Kokubunji
DATE : 2000/ 9/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/27
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/26
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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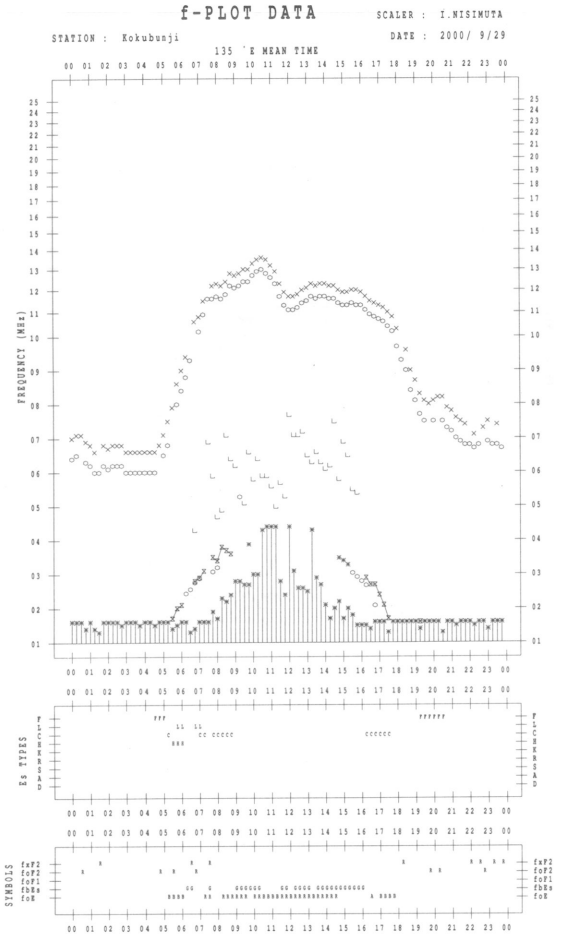
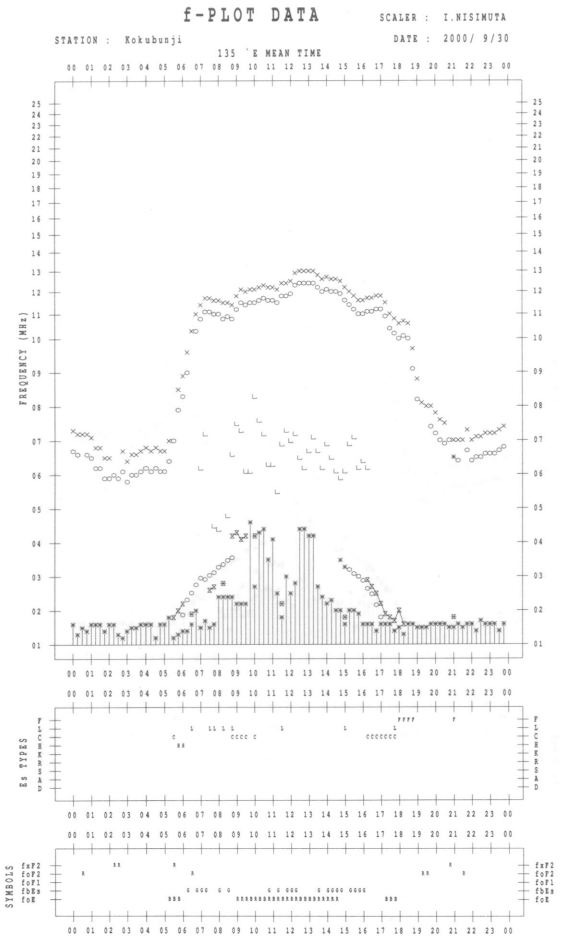
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/28
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/29
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 9/30
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

B. Solar Radio Emission
B1. Daily Data at Hiraiso
500 MHz

Hiraiso September 2000

Single-frequency total flux observations at 500 MHz					
Flux density: 10^{-22} W m^{-2} Hz^{-1}					
Date \ UT	00-03	03-06	06-09	21-24	Day
1	37	38	38	39	38
2	39	39	39	40	39
3	39	39	40	41	40
4	40	40	41	42	41
5	42	42	41	47	43
6	47	43	43	41	44
7	41	41	40	44	42
8	44	43	42	41	43
9	41	40	40	41	41
10	39	40	41	36	38
11	36	37	38	39	38
12	38	37	37	38	38
13	37	37	37	39	38
14	38	39	39	45	40
15	46	43	41	41	43
16	41	42	40	37	40
17	38	35	37	37	37
18	38	38	39	41	39
19	40	39	40	43	41
20	41	39	40	46	42
21	43	43	44	55	46
22	51	44	48	50	48
23	50	46	49	51	49
24	45	46	46	-	46
25	-	-	-	-	-
26	48	47	48	49	48
27	48	45	49	49	48
28	47	46	47	48	47
29	45	44	43	47	46
30	47	45	43	45	45
31					

Note: No data is available during the following periods.
24th 0600 - 26th 0200

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso September 2000

Single-frequency observations

Normal observing period: 2020 – 0840 U.T. (sunrise to sunset)

SEP. 2000	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS
2	200	8 S	0608.0	0609.0	2.0	30	–	SL
2	200	42 SER	0736.0	0738.0	7.0	100	–	0
2	200	47 GB	0802.0	0809.0	10.0	1050	–	WR
4	200	8 S	2339.0	2339.0	1.0	40	–	0
5	2800	4 S/F	0005.0	0006.0	6.0	110	–	WR
5	500	7 C	0357.0	0418.0	21.0	330	–	0
5	200	8 S	0358.0	0359.0	2.0	30	–	0
6	200	8 S	0119.0	0119.0	1.0	150	–	0
6	500	8 S	0549.0	0550.0	1.0	20	–	WL
7	200	42 SER	0442.0	0443.0	18.0	70	–	0
7	500	42 SER	0443.0	0452.0	16.0	50	–	0
7	200	8 S	2255.0	2256.0	1.0	60	–	MR
9	200	8 S	0042.0	0042.0	1.0	120	–	0
9	200	42 SER	0327.0	0327.0	2.0	80	–	0
10	500	8 S	2248.0	2248.0	1.0	70	–	0
11	500	8 S	0533.0	0533.0	1.0	40	–	0
11	200	8 S	0724.0	0725.0	1.0	30	–	
13	200	8 S	2235.0	2236.0	1.0	70	–	0
14	200	8 S	0309.0	0309.0	1.0	60	–	0
14	200	8 S	0507.0	0508.0	2.0	220	–	WL
15	500	42 SER	0142.0	0143.0	8.0	40	–	0
15	2800	42 SER	0143.0	0144.0	12.0	50	–	MR
15	500	47 GB	0551.0	0558.0	14.0	820	–	SR
15	200	42 SER	0551.0	0552.0	13.0	70	–	WL
15	500	47 GB	0715.0	0749.0	34.0	790	–	SR
15	200	42 SER	0715.0	0742.0	29.0	310	–	ML
16	500	7 C	0334.0	0337.0	18.0	170	–	MR
16	2800	47 GB	0408.0	0415.0	29.0	1300	–	0
16	500	47 GB	0408.0	0433.0	50.0	4540	–	0
16	200	7 C	0412.0	0416.0	34.0	200	–	SL
16	200	7 C	0646.0	0652.0	10.0	70	–	0
16	500	42 SER	0647.0	0652.0	9.0	200	–	MR
16	200	7 C	0751.0	0752.0	2.0	30	–	0
16	500	7 C	2105.0	2111.0	8.0	60	–	MR
16	200	47 GB	2107.0	2108.0	1.0	1630	–	WR
16	500	7 C	2132.0	2136.0	8.0	440	–	SR
16	200	4 S/F	2136.0	2137.0	2.0	350	–	WR
16	500	47 GB	2213.0	2217.0	5.0	750	–	SR
16	200	47 GB	2213.0	2216.0	5.0	2880	–	ML
16	500	4 S/F	2251.0	2252.0	5.0	90	–	WR
16	200	7 C	2251.0	2252.0	4.0	280	–	WR
17	500	8 S	0004.0	0005.0	2.0	190	–	MR
17	500	47 GB	0040.0	0042.0	4.0	2290	–	SR
17	200	47 GB	0040.0	0041.0	3.0	700	–	0
17	500	8 S	0258.0	0258.0	1.0	450	–	SR
17	200	7 C	0258.0	0301.0	3.0	300	–	0
17	200	7 C	0421.0	0424.0	4.0	80	–	0

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso — September 2000

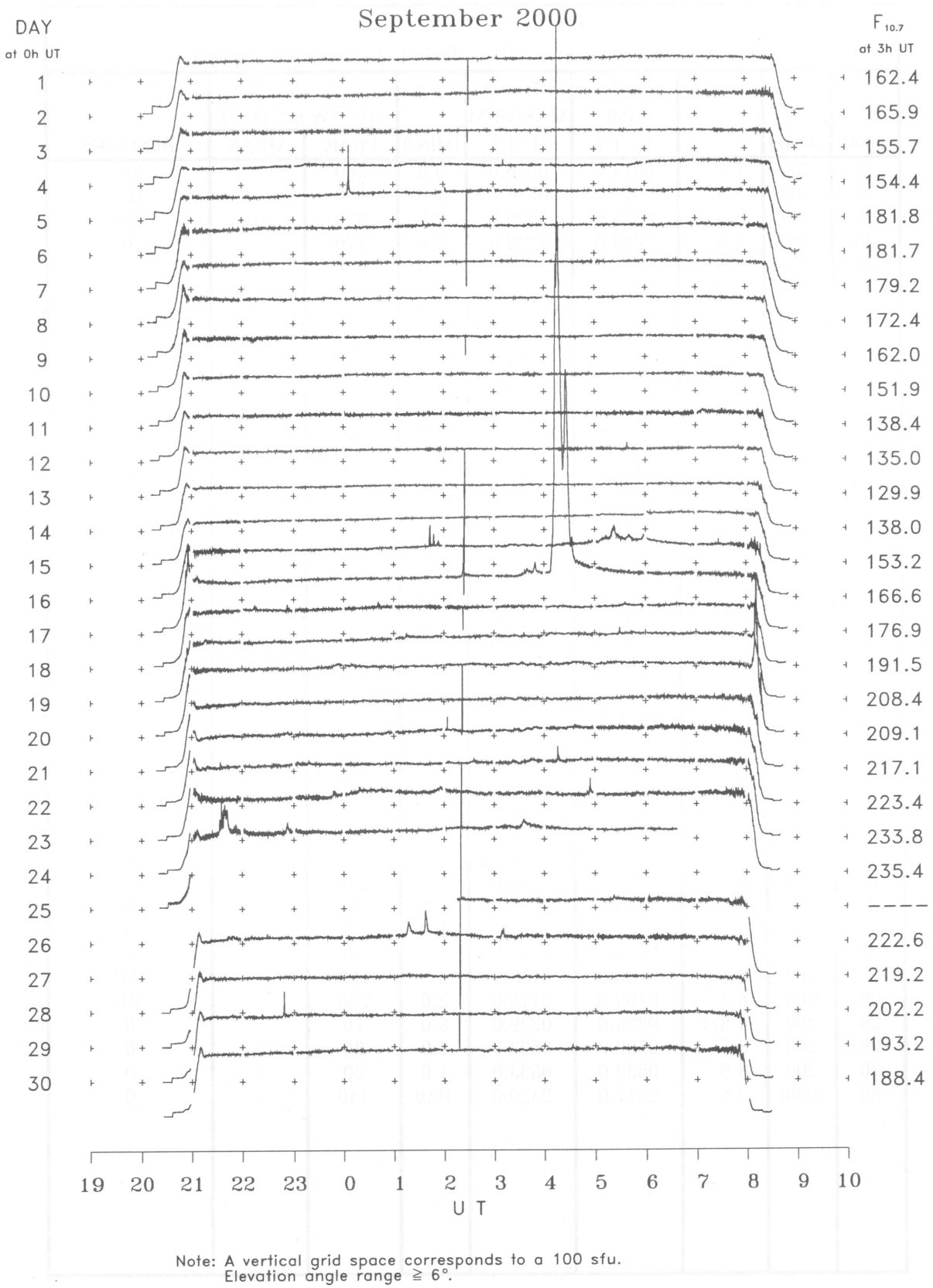
Single-frequency observations

Normal observing period: 2020 - 0840 U.T. (sunrise to sunset)

SEP. 2000	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS
17	200	7 C	0514.0	0516.0	3.0	260	-	MR
17	500	8 S	0515.0	0516.0	1.0	150	-	WR
18	500	8 S	0528.0	0529.0	2.0	320	-	WL
20	200	8 S	2228.0	2229.0	1.0	170	-	0
20	500	8 S	2251.0	2252.0	2.0	40	-	0
21	500	42 SER	0425.0	0429.0	21.0	40	-	WL
21	500	7 C	0615.0	0616.0	5.0	110	-	ML
21	500	8 S	0648.0	0649.0	1.0	80	-	ML
21	500	8 S	2134.0	2134.0	1.0	120	-	0
21	200	8 S	2134.0	2134.0	1.0	160	-	0
21	200	8 S	2234.0	2235.0	1.0	80	-	ML
21	200	8 S	2303.0	2304.0	1.0	40	-	WL
21	500	8 S	2306.0	2306.0	1.0	200	-	ML
21	200	8 S	2329.0	2329.0	1.0	70	-	WR
22	200	8 S	0126.0	0127.0	1.0	30	-	ML
22	500	8 S	0206.0	0206.0	1.0	70	-	WR
22	200	42 SER	0241.0	0247.0	7.0	70	-	0
22	200	42 SER	0413.0	0421.0	10.0	70	-	
22	200	42 SER	0438.0	0513.0	72.0	180	-	
22	500	7 C	0442.0	0442.0	2.0	70	-	
22	200	4 S/F	0705.0	0706.0	2.0	40	-	
22	200	8 S	2250.0	2250.0	1.0	50	-	WL
23	200	7 C	0425.0	0432.0	9.0	130	-	ML
23	500	7 C	0450.0	0554.0	11.0	370	-	MR
23	200	47 GB	0450.0	0451.0	9.0	1130	-	0
23	200	8 S	0504.0	0504.0	1.0	170	-	ML
23	200	42 SER	0721.0	0729.0	16.0	240	-	MR
23	200	42 SER	2126.0	2133.0	12.0	400	-	0
23	2800	7 C	2133.0	2135.0	11.0	90	-	0
23	500	7 C	2133.0	2136.0	11.0	480	-	WR
23	200	8 S	2154.0	2156.0	2.0	240	-	WL
23	500	8 S	2224.0	2224.0	1.0	40	-	0
23	200	8 S	2237.0	2238.0	1.0	170	-	0
27	2800	1 S	0136.0	0137.0	5.0	50	-	0
27	200	8 S	0136.0	0138.0	3.0	180	-	WR
28	200	8 S	0109.0	0110.0	2.0	230	-	MR
28	200	4 S/F	0325.0	0329.0	5.0	70	-	0
29	200	8 S	0502.0	0503.0	1.0	30	-	0
30	200	8 S	0532.0	0533.0	1.0	30	-	0
30	2800	3 S	2317.0	2320.0	10.0	140	-	0

B. Solar Radio Emission

B3. Summary Plots of $F_{10.7}$ at Hiraiso



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≧ 6°.

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